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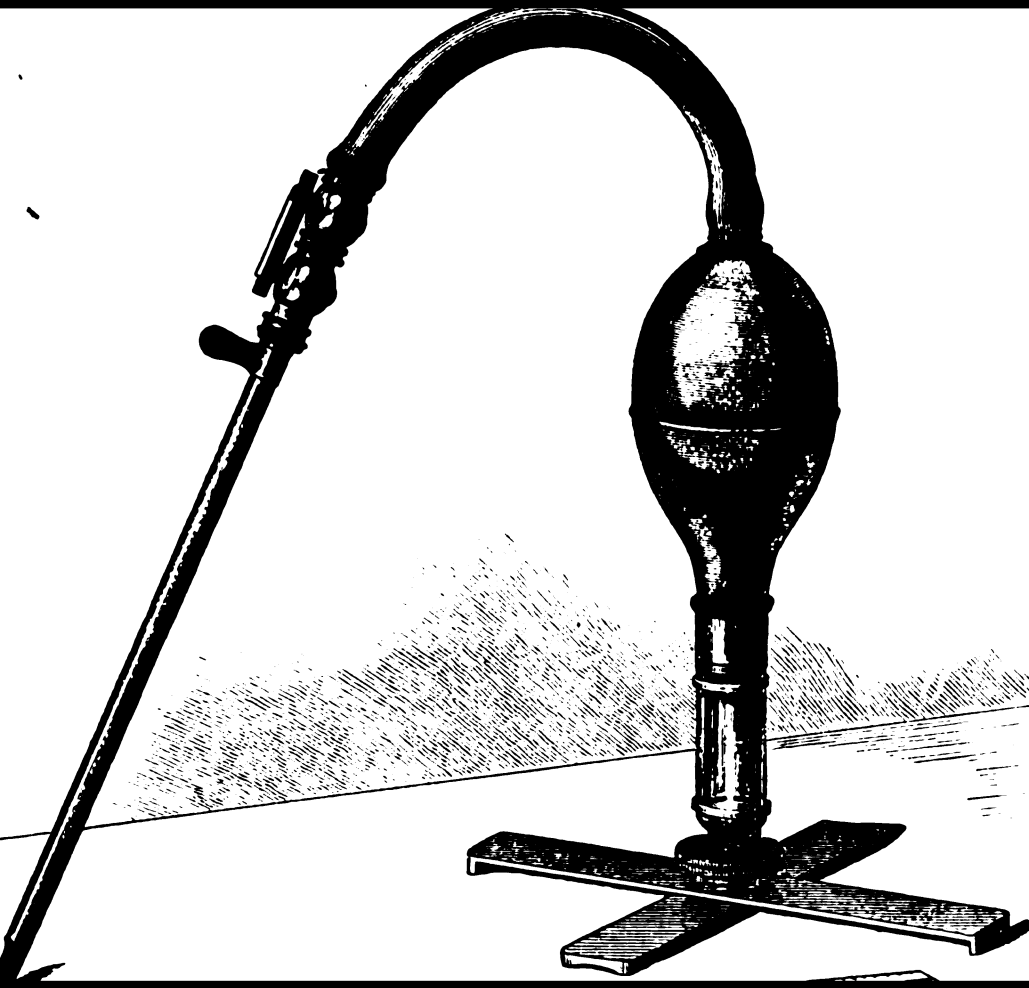

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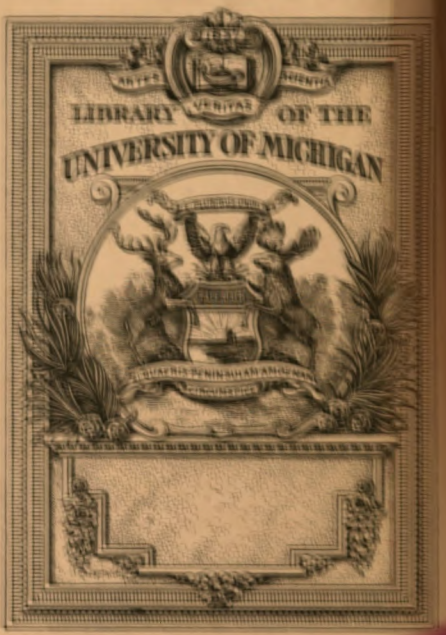

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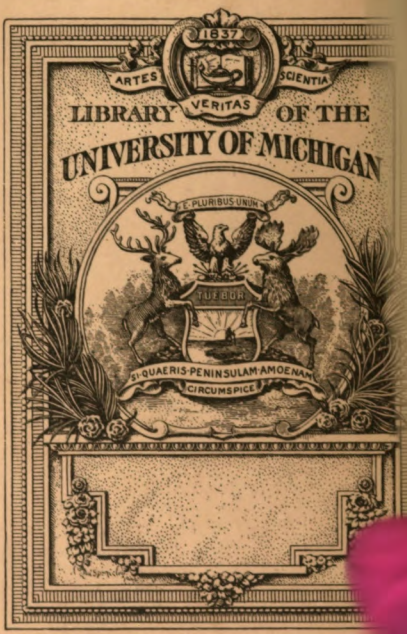

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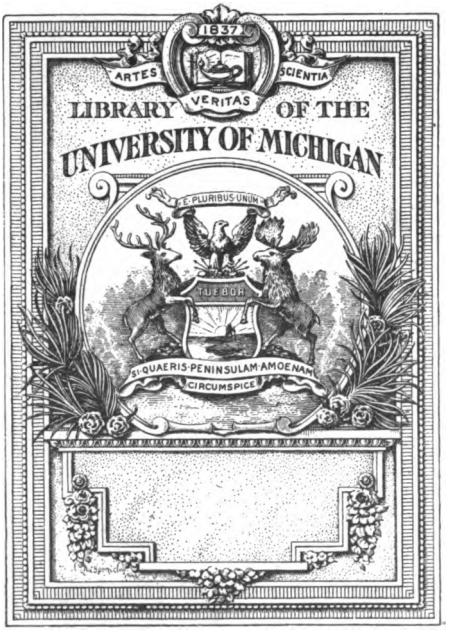

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THE present Volume comprises the Proceedings of the Society during its Twelfth Session, October 1878 to May 1879.

The Council think it proper to state that the authors of the several communications are alone responsible for the statements, reasonings, and opinions contained in their respective papers.

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1870 CASSON, JOHN HORNSEY.

1868 CAVAFY, JOHN, M.D., Senior Assistant Physician to, and Lecturer on Physiology at, St. George's Hospital; 2 Upper Berkeley Street, Portman Square, W.

Orig Memb CAYLEY, WILLIAM, M.D. (C.), Physician to, and Lecturer on the Principles and Practice of Medicine at, the Middlesex Hospital: 58 Welbeck Street, W. (C. 1874–5, S. 1876–8, C. 1879.)

1873 CHISHOLM, EDWIN, M.D.: Abergeldie, Ashfield, near Sydney, New South Wales.

1868 CHOLMELEY, WILLIAM, M.D., Physician to the Great Northern Hospital, and Margaret Street Infirmary for Consumption: 63 Grosvenor Street, W. (C. 1871–3.)

Orig Memb CHURCH, WILLIAM SELBY, M.D., Physician to, and Lecturer on Clinical Medicine at, St. Bartholomew's Hospital: 130 Harley Street, Cavendish Square, W. (C. 1874–6.)

1873 CHURTON, THOMAS: 7 Park Square, Leeds.

Orig Memb CLAPTON, EDWARD, M.D.: 10A St. Thomas's Street, Southwark, S.E. (C. 1872–4.)

Orig Memb CLARK, ANDREW, M.D., Physician to, and Lecturer on Medicine at, the London Hospital: 16 Cavendish Square, W. (C. 1876–8.)

1874 CLARK, ANDREW, Assistant Surgeon to, and Lecturer on Practical Surgery at, the Middlesex Hospital: 19 Cavendish Place, Cavendish Square, W.

1877 †CLAY, ROBERT HOGARTH, M.D.: 4 Windsor Villas, Plymouth.

1868 CLOVER, JOSEPH THOMAS: 3 Cavendish Place, Cavendish Square, W. (C. 1873.)

1877 CLUTTON, HENRY HUGH, M.A., Assistant Surgeon to St. Thomas's Hospital: 16 Palace Road, Albert Embankment, S.E.

1878 COLLIE, ALEXANDER, M.D.: Fever Hospital (Metropolitan Asylum District), The Grove, Homerton, E.

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Elected	
1878	Collins, W. M., M.D., M.C., Queen's Univ. I., Scots Guards: 78 Grosvenor Street, W.
1872	Cooke, Thomas, Assistant Surgeon to the Westminster Hospital: 16 Woburn Place, Russell Square, W.C.
1868	Cooper, Frank W.: Leytonstone, Essex.
Orig Memb	Couper, John, Surgeon to the London Hospital and Assistant Surgeon to the Royal London Ophthalmic Hospital: 80 Grosvenor Street, W. (C. 1874.)
1875	Coupland, Sidney, M.D., Assistant Physician to, and Lecturer on Pathological Anatomy at, the Middlesex Hospital: 7 Nottingham Place, W.
1879	Cripps, William Harrison, Surgical Registrar to St. Bartholomew's Hospital; Surgeon to the Great Northern Hospital: 6 Stratford Place, Oxford Street, W.
1872	Critchett, Anderson: 21 Harley Street, W.
1877	Crocker, Henry Radcliffe, M.D., Physician to the Skin Department, University College Hospital; Assistant Physician and Pathologist to the East London Hospital for Children: 135 Gower Street.
Orig Memb	Croft, John, Surgeon to St. Thomas's Hospital: 61 Brook Street, Grosvenor Square, W. (C. 1870–2.)
1868	Crucknell, Henry H., M.B.: 58 Welbeck Street.
1872	Dalby, William Bartlett, M.B. (C.), Aural Surgeon to St. George's Hospital: 18 Savile Row, W. (C. 1879.)
Orig Memb	Davies, Herbert, M.D., Senior Physician to, and Lecturer on Medicine at, the London Hospital: 23 Finsbury Square, E.C. (V.P. 1877.)
Orig Memb	Davis, John Hall, M.D., Obstetric Physician to, and Lecturer on Midwifery and Diseases of Women and Children at, the Middlesex Hospital: 24 Harley Street, W. (C. 1870.)
1868	Day, William Henry, M.D., Physician to the Samaritan Free Hospital for Women and Children: 10 Manchester Square, W.
1872	De Castro, James Cato, M.B.: Pau, France.
1879	Dennis, Frederick S., M.D.: 25 East 21st Street, New York, U.S.
1875	Dent, Clinton T.: 29 Chesham Street, Belgrave Square, S.W.
Orig Memb	Dickinson, William Howship, M.D., Physician to, and Joint Lecturer on Medicine at, St. George's Hospital; Physician to the Hospital for Sick Children: 9 Chesterfield Street, Mayfair, W. (C. 1874–5.)

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Elected	
1871	Diver, Ebenezer, M.D.: Caterham Valley.
1873	Donkin, Arthur Scott, M.D.
Orig Memb	Down, John Langdon H., M.D., Physician to, and Lecturer on Medicine at, the London Hospital: 39 Welbeck Street, W. (C. 1870–2.)
1874	Dowse, Thomas Stretch, M.D.: 2 Old Burlington Street, Piccadilly, W., and Trays Hill Hall, Hornsey Lane, Highgate, N.
1868	Drage, Charles, M.D.: Hatfield, Herts.
1879	Drewitt, T. G. Dawtry, M.B.: 10 Milner Street, Sloane Street, S.W.
Orig Memb	Duckworth, Dyce, M.D., Assistant Physician to St. Bartholomew's Hospital: 11 Grafton Street, Bond Street, W. (C. 1875–7.)
Orig Memb	Duffin, Alfred B., M.D., Physician to King's College Hospital, Professor of Pathological Anatomy in King's College, London: 18 Devonshire Street, Portland Place, W. (C. 1872–4.)
1869	Duke, Olliver Thomas, M.B., Surgeon, Bengal Army, India.
Orig Memb	Durham, Arthur Edward, Surgeon to, and Lecturer on Surgery at, Guy's Hospital: 82 Brook Street, W. (C. 1867-9.)
Orig Memb	Edis, Arthur W., M.D., Assistant Obstetric Physician to the Middlesex Hospital: 22 Wimpole Street, Cavendish Square, W.
Orig Memb	Erichsen, John E., F.R.S., Holme Professor of Clinical Surgery in University College, and Senior Surgeon to University College Hospital: 6 Cavendish Place, Cavendish Square, W. (V.P. 1869–71.)
1876	Evans, George Henry, M.D.
1868	Evans, Julian, M.B., Assistant Physician, Victoria Hospital for Sick Children: 123 Finborough Road, Redclyffe Square, S.W.
1877	Ewart, William, M.B.: 33 Curzon Street, Mayfair, W.
Orig Memb	Fagge, Charles Hilton, M.D., Senior Assistant Physician to, and Lecturer on Pathology at, Guy's Hospital: 11 St. Thomas's Street, Southwark, S.E. (C. 1875–7.)
1868	Fairbank, Frederick Royston, M.D.: 46 Hall Gate, Doncaster.
1868	Falconer, Randle Wilbraham, M.D., Physician to the Royal United and Mineral Water Hospitals, Bath.

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Elected	
1872	Farquharson, Robert, M.D. (C.), Assistant Physician to, and Lecturer on Materia Medica at, St. Mary's Hospital: 23 Brook Street, Grosvenor Square, W. (C. 1879.)
1872	Fenwick, J. C. J., M.B.: 16 Old Elvet, Durham.
1878	Field, George P., Aural Surgeon to St. Mary's Hospital: 31 Lower Seymour Street, Portman Square, W.
1876	Finlay, David White, M.D., Assistant Physician to the Middlesex Hospital: 21 Montagu Street, Portman Square, W.
1868	Fish, John Crockett, M.B.: 92 Wimpole Street, Cavendish Square, W. (C. 1869-70.)
1872	Fisher, Frederic R., Assistant Surgeon to the Victoria Hospital for Sick Children: 79 Grosvenor Street, W.
1878	*Fonmartin, Henry de, M.D. Par.: Seamen's Hospital, Greenwich.
1878	Fox, Thomas Colcott, M.B. Lond., B.A. Camb.: 14 Harley Street, Cavendish Square, W.
Orig Memb	Fox, Wilson, M.D., F.R.S. (V.P.), Physician Extraordinary to H.M. the Queen; Holme Professor of Clinical Medicine in University College, and Physician to University College Hospital: 67 Grosvenor Street, W. (C. 1873. V.P. 1878–9.)
1868	Gant, Frederick James (C.), Surgeon to the Royal Free Hospital: 16 Connaught Square, W. (C. 1877–9.)
1868	Glover, James Grey, M.D. (C.), Hon. Surgeon to the Holloway and North Islington Dispensary: 33 Compton Terrace, Islington, N. (C. 1878–9.)
1875	Godlee, Rickman John, M.S., M.B., Assistant Surgeon to University College Hospital: 22 Henrietta Street, Cavendish Square, W.
1878	Golding-Bird, C. H., M.B., Assistant Surgeon to Guy's Hospital: 13 St. Thomas's Street, Southwark, S.E.
1875	Goodhart, James Frederick, M.D., Assistant Physician to Guy's Hospital: 27 Weymouth Street, Portland Place, W.
1869	Goodridge, Henry Frederick Augustus, M.D., Physician to the Bath Royal United Hospital: Bath.
1877	Gould, A. Pearce, M.S., Assistant Surgeon to, and Lecturer on Anatomy at, the Westminster Hospital: 93 Gower Street, Bedford Square, W.C.
1871	Gover, Robert M., M.B., Medical Officer to the Millbank Prison, Millbank, S.W.
1875	Gowers, William Richard, M.D., Assistant Physician to University College Hospital: 50 Queen Anne Street, Cavendish Square, W.

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ELECTED

1868 GREEN, T. HENRY, M.D. (C.), Physician to, and Lecturer on Pathology at, the Charing Cross Hospital: 74 Wimpole Street, W. (C. 1877–9.)

1875 GREENFIELD, WILLIAM SMITH, M.D., Assistant Physician to St. Thomas's Hospital: 15 Palace Road, Albert Embankment, S.E.

Orig Memb GREENHALGH, ROBERT, M.D.: 72 Grosvenor Street, W.

Orig Memb GREENHOW, EDWARD HEADLAM, M.D., F.R.S. (*President*), Physician to the Middlesex Hospital: 14A Manchester Square, W. (T. 1867–78, P. 1879.)

1868 †GUENEAU DE MUSSY, HENRI, M.D.: 15 Rue du Cirque, Paris.

Orig Memb GULL, Sir WILLIAM WITHEY, Bart., M.D., D.C.L., F.R.S., Physician Extraordinary to the Queen: 74 Brook Street, W. (V.P. 1868–70, P. 1871–2.)

1870 GWYNN, EDMUND, M.D.: 6 Hampstead Hill Gardens, N.W.

Orig Memb HABERSHON, SAMUEL OSBORNE, M.D. (V.P.), Physician to Guy's Hospital: 70 Brook Street, W. (C. 1873, V.P. 1878–9.)

1875 HALE, C. D. B.: 8 Sussex Gardens, Hyde Park, W.

1878 HALL, F. DE HAVILLAND, M.D.: 46 Queen Anne Street, Cavendish Square, W.

1878 HAMILTON, J. LAWRENCE, L.R.C.P. Ed.: 34 Gloucester Terrace, Hyde Park, W.

1873 HARLEY, GEORGE, M.D., F.R.S.: 25 Harley Street, Cavendish Square, W.

Orig Memb HARLEY, JOHN, M.D., F.L.S., Physician to, and Lecturer on Clinical Medicine at, St. Thomas's Hospital: 39 Brook Street, Grosvenor Square, W. (C. 1875.)

1872 HARRIS, HENRY, M.D.: Trengweath, Redruth, Cornwall.

Orig Memb HART, ERNEST: 38 Wimpole Street, Cavendish Square, W. (C. 1867–8.)

1869 HAWARD, J. WARRINGTON, Assistant Surgeon to St. George's Hospital; Assistant Surgeon to the Hospital for Sick Children: 5 Montagu Street, Portman Square, W. (C. 1876–8.)

1868 HAY, THOMAS B.: Christ Church, New Zealand.

Orig Memb HEATH, CHRISTOPHER (*Treasurer*), Surgeon to University College Hospital, and Holme Professor of Clinical Surgery in University College: 36 Cavendish Square, W. (C. 1867–71, V.P. 1876–8, T. 1879.)

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Elected	
1868	Heslop, Thomas Pretious, M.D., Physician to the Children's Hospital, Birmingham.
1868	Hewan, Archibald, M.D.: 9 Chester Square, S.W.
Orig Memb	Hewett, Prescott Gardner, F.R.S., Surgeon Extraordinary to H.M. the Queen; Consulting Surgeon to St. George's Hospital: 1 Chesterfield Street, Mayfair, W. (V.P. 1869–71, P. 1873–4.)
Orig Memb	Hewitt, Grailt, M.D. (C.), Professor of Midwifery in University College, and Obstetric Physician to University College Hospital: 36 Berkeley Square, W. (C. 1878–9.)
Orig Memb	Hicks, J. Braxton, M.D., F.R.S., F.L.S., Physician Accoucheur to, and Lecturer on Midwifery and the Diseases of Women and Children at, Guy's Hospital: 24 George Street, Hanover Square, W. (C. 1875–7.)
1868	Hill, Berkeley, M.B., Professor of Clinical Surgery in University College, London, Surgeon to University College Hospital, and Surgeon to the Lock Hospital: 55 Wimpole Street, W. (C. 1870–1.)
1874	Holderness, William Brown, late Surgeon to the Huntingdon County Hospital.
1868	†Holman, Constantine, M.D.: Reigate, Surrey.
1868	Holman, William Henry, M.B.: 68 Adelaide Road South, Hampstead, N.W.
Orig Memb	Holmes, Timothy, Surgeon to, and Lecturer on Surgery at, St. George's Hospital; Surgeon-in-Chief to the Metropolitan Police Force: 18 Great Cumberland Place, Hyde Park, W. (C. 1867–9, V.P. 1873–5.)
Orig Memb	Holt, Barnard Wight, Consulting Surgeon to, and Lecturer on Clinical Surgery at, the Westminster Hospital; Medical Officer of Health for Westminster: 14 Savile Row, W.
Orig Memb	Holthouse, Carsten, Surgeon to, and Lecturer on Surgery at, the Westminster Hospital; Consulting Surgeon to the South London Ophthalmic Hospital: 15 George Street, Hanover Square, W. (C. 1870–2.)
1878	Hood, Donald William Charles, M.D.: 43 Green Street, Park Lane, W.
1873	Hope, William, M.D., Senior Physician to Queen Charlotte's Lying-in Hospital: 56 Curzon Street, Mayfair, W.

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ELECTED

1871 HOUGHTON, HENRY G., L.K.Q.C.P. Ireland: 6 Mount Street, Grosvenor Square, W.

1878 HOUGHTON, WALTER B., M.D., Assistant Physician to Charing Cross Hospital: 26 Cavendish Square, W.

1876 HOWSE, HENRY GREENWAY, M.S., Surgeon to, and Lecturer on Anatomy at, Guy's Hospital; Surgeon to the Evelina Hospital for Sick Children: 10 St. Thomas's Street, S.E.

Orig Memb HULKE, JOHN WHITAKER, F.R.S. (V.P.), Surgeon to, and Lecturer on Surgery at, the Middlesex Hospital, and Surgeon to the Royal London Ophthalmic Hospital: 10 Old Burlington Street, W. (C. 1867–9, V.P. 1878–9.)

Orig Memb HUMPHRY, GEORGE MURRAY, M.D., F.R.S., Professor of Anatomy in the University of Cambridge, and Surgeon to Addenbrooke's Hospital, Cambridge. (V.P. 1867–70.)

Orig Memb HUTCHINSON, JONATHAN, Surgeon to, and Lecturer on Surgery at, the London Hospital; Surgeon to the Hospital for Diseases of the Skin, and Surgeon to the Royal London Ophthalmic Hospital: 15 Cavendish Square, W. (C. 1867–8, V.P. 1875–6.)

1879 INKSON, JAMES, M.D., Surgeon-Major, Army Medical Department: Staff Quarters, Garden Street, Brompton, Chatham.

1875 IRVINE, JAMES PEARSON, M.D., Assistant Physician to, and Lecturer on Forensic Medicine at, the Charing Cross Hospital: 3 Mansfield Street, Cavendish Square, W.

Orig Memb JACKSON, J. HUGHLINGS, M.D., Physician to, and Lecturer on Physiology at, the London Hospital; Physician to the National Hospital for the Paralysed and Epileptic: 3 Manchester Square, W. (C. 1872–3.)

1877 JACOBSON, WALTER HAMILTON ACLAND, M.B., Assistant Surgeon to Guy's Hospital: 41 Finsbury Square.

Orig Memb JENNER, Sir WILLIAM, Bart., M.D., K.C.B., D.C.L., F.R.S., Physician in Ordinary to H.M. the Queen and to H.R.H. the Prince of Wales; Consulting Physician to University College Hospital: 63 Brook Street, W. (V.P. 1867–70, P. 1875–6.)

1875 JESSETT, FREDERICK BOWREMAN: Pier Road, Erith, Kent.

Orig Memb JOHNSON, GEORGE, M.D., F.R.S., Physician to King's College Hospital: 11 Savile Row, W. (V.P. 1874–6.)

1878 JOHNSTON, WILLIAM, M.D., M.C.: 16 Lonsdale Terrace, Upper Kent Street, Leicester.

Orig Memb JONES, SYDNEY, M.B., Surgeon to, and Lecturer on Surgery at, St. Thomas's Hospital: 16 George Street, Hanover Square, W. (C. 1867–8.)

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Elected	
1872	Jones, Thomas R., M.D., Assistant Physician, Victoria Hospital for Sick Children: 19 Chapel Street, Belgrave Square, S.W.
1876	Jordan, Furneaux, Surgeon to the Queen's Hospital, Birmingham: 22 Colmore Row, Birmingham.
1878	Keetley, Charles Robert Bell, Assistant Surgeon to the West London Hospital: 24 Manchester Street, W.
Orig Memb	Kelly, Charles, M.D., Medical Officer of Health for the West Sussex District: Worthing, Sussex.
1868	Kesteven, William B., M.D.: 401 Holloway Road, N. (C. 1870–2.)
1878	Lacey, Thomas Warner: 196 Burrage Road, Plumstead, E.
1873	Lacy, C. de Lacy, 5 Ovington Square, Brompton.
1868	Langmore, John C., M.B.: 20 Oxford Terrace, Hyde Park, W. (C. 1872–5.)
Orig Memb	Langton, John (C.), Assistant Surgeon to, and Lecturer on Anatomy at, St. Bartholomew's Hospital, and Surgeon to the City of London Truss Society: 2 Harley Street, W. (C. 1878–9.)
1869	Lawrence, James E.: Geraldine Lodge, East Hill, Wandsworth, S.W.
Orig Memb	Lawson, George, Surgeon to, and Joint Lecturer on Surgery at, the Middlesex Hospital, and Surgeon to the Royal London Ophthalmic Hospital: 12 Harley Street, W. (S. 1871–3, C. 1874–6.)
1869	Leach, Harry, Medical Officer of the Port of London: 12 Rutland Park Villas, Catford Bridge, S.E.
1877	Lediard, Henry Ambrose, M.D., Cleveland Street Asylum: 42 Cleveland Street, Fitzroy Square, W.
Orig Memb	Lee, Henry, Consulting Surgeon to St. George's Hospital: 9 Savile Row, W. (V.P. 1870–2.)
1874	Lee, Robert James, M.D., Assistant Physician to the Hospital for Sick Children: 6 Savile Row, W.
1877	Lees, David B., M.D., Assistant Physician to Charing Cross Hospital, and to the Hospital for Sick Children: 2 Thurloe Houses, Thurloe Square, S.W.
1877	Leggatt, Alfred: 13 William Street, Lowndes Square, S.W.
1878	Lister, Joseph, F.R.S., Professor of Clinical Surgery at King's College, and Surgeon to King's College Hospital: 12 Park Crescent, Regent's Park, W.
1868	Little, Louis Stromeyer: China.
1875	Liveing, Edward, M.D.: 52 Queen Anne Street, Cavendish Square, W.

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Elected	
1872	Liveing, Robert, M.D., Lecturer on Dermatology, and Physician to the Skin Department at the Middlesex Hospital: 11 Manchester Square, W.
1878	Lloyd, Robert Hodgens, M.D., Medical Superintendent, Lambeth Infirmary, S.W.
1876	Longhurst, Arthur Edwin Temple, M.D.: 22 Wilton Street, Grosvenor Place, S.W.
1876	Lowne, Benjamin Thompson: 49 Colville Gardens, Bayswater, W.
1876	Lucas, R. Clement, M.B., B.S., Assistant Surgeon to Guy's Hospital: 4 St. Thomas's Street, S.E.
1871	MacCormac, William (C.), Surgeon to, and Lecturer on Surgery at, St. Thomas's Hospital: 13 Harley Street, W. (C. 1877–9.)
Orig Memb	Mackenzie, Morell, M.D., Physician to the Hospital for Diseases of the Throat: 19 Harley Street, Cavendish Square, W.
1879	Mackenzie, Stephen, M.D., Assistant Physician to, and Joint Lecturer on Pathology at, the London Hospital: 26 Finsbury Square, E.C.
1877	Maclean, Thomas Edwin, M.B., B.S.
1875	Macnamara, Charles (C.), Surgeon to the Westminster Hospital: 13 Grosvenor Street, W. (C. 1879.)
1879	Magill, James, M.D., M.C., Surgeon, Coldstream Guards: Coldstream Guards Hospital, Caterham Barracks.
1874	Mahomed, Fred. Akbar, M.D., Medical Registrar, Guy's Hospital: 12 St. Thomas's Street, Southwark, S.E.
Orig Memb	†Marcet, William, M.D., F.R.S.: Villa Bianca, Cannes. (C. 1867–9.)
1868	Marsh, F. Howard (*Hon. Secretary*), Assistant Surgeon to St. Bartholomew's Hospital: 36 Bruton Street, Berkeley Square, W. (C. 1876–7, S. 1878–9.)
1875	Marshall, F. J., Resident Medical Officer, St. George's Hospital, W.
1868	†May, Edward Hooper, M.D.: High Cross, Tottenham, Middlesex, N.
1868	Meadows, Alfred, M.D., Physician Accoucheur to, and Lecturer on Midwifery at, St. Mary's Hospital: 27 George Street, Hanover Square, W. (C. 1871–4.)
1876	Melladew, H. F. L., M.D., Surgeon, Royal Horse Guards: Regent's Park Barracks, N.W.
1878	Meredith, William Appleton, M.B., C.M., Surgeon to the Samaritan Free Hospital for Women and Children: 14 Old Burlington Street, W.

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Electrd	
1873	Mickle, William Julius, M.D., Physician Superintendent, Grove Hall Asylum, Bow, E.
1877	Milner, Edward, Surgeon to the Lock Hospital: 32 New Cavendish Street, Portland Place, W.
1874	Morgan, John Hammond: 12 Chapel Street, Park Lane, W.
1877	Morris, Henry, M.B., Surgeon to, and Lecturer on Clinical Surgery at, the Middlesex Hospital: 2 Mansfield Street, Portland Place, W.
1877	Morris, Malcolm Alex., Joint Lecturer on Skin Diseases at St. Mary's Hospital: 63 Montagu Square, W.
Orig Memb	Moxon, Walter, M.D., F.L.S., Physician to, and Lecturer on Materia Medica at, Guy's Hospital: 6 Finsbury Circus, E.C. (C. 1874–6.)
1878	Muir, James C. P.: 44 Cornwall Road, Westbourne Park, W.
1875	Murphy, Shirley F., 19 North Villas, Camden Square, N.W.
1868	Myers, Arthur Bowen Richards (C.), Surgeon to 1st Battalion of the Coldstream Guards: Vincent Square, Westminster, S.W. (C. 1877–9.)
1873	Myrtle, Andrew S., M.D.: Harrogate.
1874	Nankivell, Arthur Wolcot, Resident Surgeon, St. Bartholomew's Hospital, Chatham.
1875	Nettleship, Edward, Ophthalmic Surgeon to, and Lecturer on Ophthalmology at, St. Thomas's Hospital: 4 Wimpole Street, Cavendish Square, W.
Orig Memb	Norton, Arthur Trehern, Surgeon to, and Lecturer on Anatomy at, St. Mary's Hospital: 6 Wimpole Street, W. (C. 1874–6.)
Orig Memb	Nunn, Thomas William, Consulting Surgeon to the Middlesex Hospital: 8 Stratford Place, Oxford Street, W. (C. 1873–4.)
Orig Memb	Ogle, John William, M.D., Consulting Physician to St. George's Hospital: 30 Cavendish Square, W. (C. 1867–8.)
1868	†Ogle, William, M.D., Physician to the Derbyshire General Infirmary: 98 Friar Gate, Derby.
1869	Oldfield, E., M.D.: Surinam.
1868	Oppert, Francis, M.D.: Germany.
1877	Ord, William Miller, M.D., Physician to, and Lecturer on Medicine at, St. Thomas's Hospital: 7 Brook Street, Hanover Square, W.
1876	Ottley, Walter, M.B., Demonstrator of Anatomy at University College: 18 Weymouth Street, Portland Place, W.

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ELECTED

1877 OWEN, ISAMBARD, M.B., Medical Registrar, St. George's Hospital: 41 Gloucester Gardens, Bishop's Road, W.

1875 PAGE, HERBERT W., M.C., M.B., Assistant Surgeon to St. Mary's Hospital: 28 New Cavendish Street, W.

Orig Memb PAGET, Sir JAMES, Bart., D.C.L., LL.D., F.R.S., Sergeant-Surgeon Extraordinary to H.M. the Queen; Surgeon in Ordinary to H.R.H. the Prince of Wales; Consulting Surgeon to St. Bartholomew's Hospital: 1 Harewood Place, Hanover Square, W. (V.P. 1867–8, P. 1869–70.)

1873 PARKER, ROBERT WILLIAM, Assistant Surgeon, East London Children's Hospital: 8 Old Cavendish Street, W.

Orig Memb PAVY, FREDERICK WILLIAM, M.D., F.R.S., Physician to, and Lecturer on Medicine at, Guy's Hospital: 35 Grosvenor Street, W. (C. 1869–71.)

Orig Memb PEACOCK, THOMAS BEVILL, M.D., Physician to St. Thomas's Hospital, Consulting Physician to the City of London Hospital for Diseases of the Chest: 20 Finsbury Circus, E.C. (C. 1867–8, V.P. 1869–71.)

1874 PHILLIPS, CHARLES DOUGLAS F., M.D., Lecturer on Materia Medica at the Westminster Hospital: 59 Brook Street, and 2 Grosvenor Square, W.

Orig Memb PICK, THOMAS PICKERING (C.), Surgeon to, and Lecturer on Anatomy at, St. George's Hospital; Surgeon to the Belgrave Hospital for Children: 13 South Eaton Place, Eaton Sq., S.W. (S. 1874–7, C. 1878–9.)

1871 †PLAYNE, ALFRED, M.B.: Maidenhead.

Orig Memb POLLOCK, A. JULIUS, M.D. (C.), Physician to the Charing Cross Hospital; Physician to the Foundling Hospital: 85 Harley Street, Cavendish Square, W. (C. 1877–9.)

1875 POLLOCK, GEORGE DAVID, Surgeon in Ordinary to H.R.H. the Prince of Wales; Surgeon to St. George's Hospital: 36 Grosvenor Street, W.

1868 POLLOCK, JAMES EDWARD, M.D. (C.), Physician to the Hospital for Consumption and Diseases of the Chest: 52 Upper Brook Street, Grosvenor Square, W. (C. 1878–9.)

1871 POORE, GEORGE VIVIAN, M.D. (C.), Assistant Physician to University College Hospital: 30 Wimpole Street, W. (C. 1879.)

1873 PORT, HEINRICH, M.D., Physician to the German Hospital: 48 Finsbury Square, E.C.

Orig Memb POWELL, R. DOUGLAS, M.D., Physician to the Hospital for Consumption and Diseases of the Chest, Brompton; Assistant Physician to the Middlesex Hospital: 15 Henrietta Street, Cavendish Square, W. (C. 1874–6.)

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ELECTED

1868 PRENTIS, CHARLES, Surgeon-Major, Bengal Medical Service: 11 Upper Phillimore Place, Kensington.

Orig Memb QUAIN, RICHARD, M.D., F.R.S., Consulting Physician to the Hospital for Consumption and Diseases of the Chest: 67 Harley Street, W. (C. 1867–9.)

Orig Memb RAMSKILL, J. SPENCE, M.D., Physician to, and Lecturer on Medicine at, the London Hospital; Senior Physician to the National Hospital for the Paralysed and Epileptic: 5 St. Helen's Place, Bishopsgate Street, E.C.

1873 RANSFORD, GIFFORD, M.D.: 27 Gloucester Place, Hyde Park, W.

1868 RASCH, ADOLPHUS A., M.D., Physician for Diseases of Women to the German Hospital: 7 South Street, Finsbury Square, E.C.

1877 RAYNER, HENRY, M.D., Lecturer on Mental Diseases at St. Thomas's Hospital: Middlesex County Lunatic Asylum, Hanwell, W.

1874 REE, FREDERICK.

Orig Memb REES, GEORGE OWEN, M.D., F.R.S., Consulting Physician to Guy's Hospital: 26 Albemarle Street, W. (V.P. 1871–3.)

1868 REEVES, HENRY A., Assistant Surgeon to the London Hospital: 8 Grosvenor Street, W.

Orig Memb REYNOLDS, JOHN RUSSELL, M.D., F.R.S., Consulting Physician to University College Hospital: 38 Grosvenor Street, W. (C. 1867–8.)

1868 RICE, MICHAEL W., M.D.: 34 Cadogan Place, S.W. (C. 1876–8.)

Orig Memb RINGER, SYDNEY, M.D., Professor of the Principles and Practice of Medicine in University College, and Physician to University College Hospital: 15 Cavendish Place, W. (C. 1871–2.)

1877 RIVINGTON, WALTER, M.S., M.B., Surgeon to, and Lecturer on Anatomy at, the London Hospital: 22 Finsbury Square, E.C.

1873 †ROBERTS, DAVID LLOYD, M.D., Physician to St. Mary's Hospital, Manchester: 23 St. John Street, Manchester.

1876 ROBINSON, FREDERICK, M.D., Surgeon-Major, Scots Fusilier Guards: 41 Claverton Terrace, St. George's Road, S.W.

1875 ROGERS, WILLIAM RICHARD, M.D.: 56 Berners Street, Oxford Street, W.

1877 ROTH, BERNARD M. S., M.D.: 48 Wimpole Street, W., and 18 Grand Parade, Brighton.

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Elected	
Orig Memb	Rouse, James, Surgeon to St. George's Hospital, and to the Royal Ophthalmic Hospital, Charing Cross: 2 Wilton Street, Grosvenor Place, S.W. (C. 1875–7.)
1874	Rowland, Edward R.: Pelham Lodge, Isleworth.
1868	Sanderson, Hugh James, M.D.: 26 Upper Berkeley Street, W.
Orig Memb	Sanderson, John Burdon, M.D., F.R.S., Jodrell Professor of Human Physiology in University College: 26 Gordon Square, W.C. (S. 1867–9, C. 1870, V.P. 1871–3.)
1878	Sangster, Alfred, M.B., Lecturer on Skin Diseases at the Charing Cross Hospital: 7 Old Burlington Street, W.
1873	Savage, George Henry, M.D.: Bethlehem Royal Hospital, St. George's Road, S.E.
1877	Seaton, Edward, M.D., Physician to the Nottingham General Dispensary: 8 Oxford Street, Nottingham.
1869	Sedgwick, Leonard William, M.D. (C.): 2 Gloucester Terrace, Hyde Park, W. (C. 1879.)
1878	Semon, Felix, M.D.: 6 Chandos Street, Cavendish Square, W.
1875	Sherwood, Arthur Paul, Eastbourne.
1876	Shuter, James L., M.B.: St. Bartholomew's Hospital, and Lawn House, Tufnell Park Road, Holloway, N.
Orig Memb	Sibley, Septimus William: 7 Harley Street, Cavendish Square, W. (C. 1871–4.)
Orig Memb	Simon, John, D.C.L., F.R.S., Consulting Surgeon to St. Thomas's Hospital: 40 Kensington Square, W. (V.P. 1867–70.)
1873	Simpson, George A. Malcolm, M.D., C.M.: Hampstead Lane, Highgate, N.
1879	Skerritt, Edward Markham, M.D.: Cobourg Villa, Richmond Hill, Clifton, Bristol.
1877	Skinner, William A., 45 Lower Belgrave Street, Eaton Square, S.W.
1872	Slight, George, M.D.: 25 Brewer St., Regent St., W.
1875	Smith, Gilbart, M.A., M.B., Assistant Physician to the London Hospital; Physician to the Royal Hospital for Diseases of the Chest, City Road: 68 Harley Street, Cavendish Square, W.
1868	Smith, Heywood, M.D., Physician to the Hospital for Women, and Physician to the British Lying-in Hospital: 2 Portugal Street, Grosvenor Square, W.
1868	Smith, Protheroe, M.D., Physician to the Hospital for Women: 42 Park Street, Grosvenor Square, W.

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Elected	
Orig Memb	Smith, Thomas, Surgeon to, and Lecturer on Clinical Surgery at, St. Bartholomew's Hospital, and Surgeon to the Hospital for Sick Children: 5 Stratford Place, Oxford Street, W. (C. 1869–71.)
1873	Smith, William Johnson, Surgeon to the Seamen's Hospital, Greenwich, S.E.
1873	Smith, William Wilberforce, M.D.: 2 Eastbourne Terrace, Bishop's Road, W.
1868	Snow, Wm. V., M.D.: Richmond Gardens, Bournemouth.
Orig Memb	Southey, Reginald, M.D., Physician to, and Lecturer on Forensic Medicine and Hygiene at, St. Bartholomew's Hospital: 6 Harley Street, Cavendish Square, W. (C. 1867–70, 1876–8, S. 1873–5.)
1876	Squire, Balmanno, M.B.: 24 Weymouth Street, Portland Place, W.
1879	Staples, Francis Patrick, Assistant Professor of Military Surgery, Netley: Army Medical Department, Royal Victoria Hospital, Netley.
Orig Memb	Stewart, Alexander Patrick, M.D., Consulting Physician to the Middlesex Hospital: 75 Grosvenor Street, W. (V.P. 1872–4.)
1871	Stewart, William Edward: 16 Harley Street, Cavendish Square, W.
1874	Stirling, Edward C., M.B., Assistant Surgeon to St. George's Hospital: 60 Great Cumberland Place, Hyde Park, W.
1878	Stokes, William, M.D., Professor of Surgery, Royal College of Surgeons, Ireland; Surgeon to the Richmond Surgical Hospital: 5 Merrion Square, Dublin.
1878	Strugnell, Frederick William, Resident Surgeon, Small-Pox Hospital, Highgate, N.
1878	Sturge, William Allen, M.D., Assistant Physician to the Royal Free Hospital: 9 Wimpole Street, W.
1872	Sutherland, Henry, M.D., Lecturer on Insanity, Westminster Hospital: 6 Richmond Terrace, Whitehall, S.W.
1868	Sutro, Sigismund, M.D., Senior Physician to the German Hospital: 37A Finsbury Square, E.C.
Orig Memb	Sutton, Henry Gawen, M.B., Physician to, and Lecturer on Medicine at, the London Hospital; and Physician to the City of London Hospital for Diseases of the Chest: 9 Finsbury Square, E.C. (C. 1878.)
1876	Symonds, Horatio P.: 35 Beaumont Street, Oxford.
1868	Tatham, John, M.D., Assistant Physician to the Hospital for Consumption and Diseases of the Chest: 12 George Street, Hanover Square, W.

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Elected	
1878	Tayler, Francis Thomas, B.A., M.B., 224 Lewisham High Road, S.E.
1875	Taylor, Frederick, M.D. (*Hon. Secretary*), Assistant Physician to Guy's Hospital: 15 St. Thomas Street, Southwark, S.E. (S. 1879.)
Orig Memb	Teevan, William F., Surgeon to the West London Hospital: 10 Portman Square, W.
Orig Memb	Thompson, Edmund Symes, M.D., Physician to the Hospital for Consumption and Diseases of the Chest; Gresham Professor of Medicine: 33 Cavendish Square, W.
Orig Memb	Thompson, Sir Henry, Knt., Surgeon Extraordinary to H.M. the King of the Belgians; Emeritus Professor of Clinical Surgery in University College: 35 Wimpole Street, W. (C. 1867–8.)
Orig Memb	Thompson, Henry, M.D., Fellow of St. John's College, Cambridge; Consulting Physician to the Middlesex Hospital: 53 Queen Anne Street, W. (V.P. 1875–7.)
1872	Thornton, William Pugin, Surgeon to the Hospital for Diseases of the Throat; Surgeon to the Marylebone Dispensary: 42 Devonshire Street, Portland Place, W.
1876	Thrupp, James Godfrey.
1877	Tibbits, Herbert, F.R.C.P. Ed., Medical Superintendent of the National Hospital for the Paralysed and Epileptic: 30 New Cavendish Street, W.
1874	Travers, William: 2 Phillimore Gardens, Kensington, W.
1877	Tweedy, John, Assistant Surgeon to the Royal London Ophthalmic Hospital: 18 Harley Street, Cavendish Square, W.
1878	Tyson, William Joseph: 89 Sandgate Street, Folkestone.
1868	Venning, Edgcombe: 87 Sloane Street, S.W. (C. 1876–8.)
1876	Wadham, William, M.D., Physician to, and Lecturer on Clinical Medicine at, St. George's Hospital: 14 Park Lane, W.
1868	Wagstaffe, William Warwick, Assistant Surgeon to St. Thomas's Hospital: 2 Palace Road, Albert Embankment, Westminster Bridge, S.E. (C. 1878.)
1869	Walker, Joseph, Dental Surgeon to the Westminster Hospital: 22 Grosvenor Street, W.
1875	Walsham, William J., Demonstrator of Anatomy and Operative Surgery at St. Bartholomew's Hospital: 27 Weymouth Street, Portland Place, W.
1870	Warwick, Richard Archer, M.D., Surgeon to the Richmond Infirmary: 5 Hill Rise, Richmond, S.W.
1876	Waters, John H., M.D.: 101 Jermyn Street, St. James's, S.W.

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Elected	
1868	Watkins, Edwin T., M.D.: 61 Guilford Street, W.C.
Orig Memb	Watson, William Spencer, M.B., Surgeon to the Great Northern Hospital; Surgeon to the Royal South London Ophthalmic Hospital: 7 Henrietta Street, Cavendish Square, W.
Orig Memb	Weber, Hermann, M.D., Physician to the German Hospital: 10 Grosvenor Street, W. (C. 1867–71, V.P. 1873–5.)
1876	Weir, Archibald, M.D., St. Mungho's, Great Malvern.
1869	Wells, J. Soelberg, M.D., Professor of Ophthalmology at King's College; Ophthalmic Surgeon to King's College Hospital; and Surgeon to the Royal London Ophthalmic Hospital, Moorfields: 16 Savile Row, W. (C. 1875–7.)
1868	Wells, Thomas Spencer, Surgeon in Ordinary to H.M.'s Household; Surgeon to the Samaritan Free Hospital: 3 Upper Grosvenor Street, W. (C. 1873.)
1874	Wheelhouse, Claudius Galen, Senior Surgeon to the Leeds General Infirmary, and Lecturer on Surgery, Leeds Medical School: Hilary Place, Leeds.
1868	Whipham, Thomas Tillyer, M.B. (C.), Physician to, and Lecturer on Clinical Medicine at, St. George's Hospital: 37 Green Street, Grosvenor Square, W. (C. 1878–9.)
1874	Whistler, W. M., M.D.: 28 Wimpole Street.
1871	Wight, George, M.B., C.M.: 428 Liverpool Road, N.
1879	Wilcox, Henry, M.B.: 170 Lewisham High Road, S.E.
Orig Memb	Wilks, Samuel, M.D., F.R.S., Physician to, and Lecturer on Medicine at, Guy's Hospital: 77 Grosvenor Street, W. (C. 1871–2.)
Orig Memb	Willett, Alfred, Assistant Surgeon to St. Bartholomew's Hospital: 36 Wimpole Street, W. (C. 1872–5.)
Orig Memb	Williams, Charles Theodore, M.D. (C.), Physician to the Hospital for Consumption and Diseases of the Chest: 47 Upper Brook Street, Grosvenor Square, W. (C. 1877–9.)
1870	Williams, William Rhys, M.D., Commissioner in Lunacy: 19 Whitehall Place, S.W.
1876	Williamson, James Mann, M.D.: Ventnor, Isle of Wight.
Orig Memb	Willis, Francis, M.D.: Braceborough, Stamford.
1868	Wiltshire, Alfred, M.D., Joint Lecturer on Obstetrics, and Assistant Physician-Accoucheur, St. Mary's Hospital: 57 Wimpole Street, W.
1872	Yeo, J. Burney, M.D., Physician to King's College Hospital; Assistant Physician to the Brompton Hospital for Consumption: 44 Hertford Street, Mayfair, W.

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CLINICAL SOCIETY OF LONDON.—BALANCE SHEET 1877-78.

1877		£	s.	d.	1878		£	s.	d.
	To balance from last account	211	16	7		By cost of printing, binding, and illustrating Vol. XI. of 'Transactions'	141	16	0
	„ Arrears of subscriptions for 1876-77	2	2	0		„ Royal Medical and Chirurgical Society, payment for use of rooms, &c.	47	5	0
	„ Subscriptions for 1877-78	233	2	0		„ Refreshments and attendance at meetings	31	10	0
	„ Admission fees from 20 new members	42	0	0		„ Printing, stationery, postages, &c.	33	10	4
	„ One composition fee	15	15	0		„ Mr. Wheatley for secretarial work, making index, &c.	8	8	0
	„ Dividends on £400 Consols—January	5	18	6		„ Collection of subscriptions	10	0	0
	„ Dividends on £400 Consols—July	5	17	6		„ Cost of advertising, and Messrs. Longmans' commission on sale of 'Transactions'	7	16	8
	„ Sale of 'Transactions'	17	2	10		Balance in Treasurer's hands, January 1879	253	8	5
		£533	14	5			£533	14	5

Amount of Stock standing in the names of the Trustees, January 1, 1879, £400 3 per cent. Consols.

E. HEADLAM GREENHOW, M.D., *Treasurer.*

Audited and found correct { JAMES F. GOODHART, F. A. MAHOMED, } *Auditors.*

WILLIAM CAYLEY, *Hon. Sec.*

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ADDRESS BY THE PRESIDENT,

EDWARD HEADLAM GREENHOW,

M.D., F.R.S.

GENTLEMEN,—On taking the President's chair for the first time, I beg to thank you most heartily for the great honour you have conferred upon me,—an honour which is much enhanced, in my estimation, by the circumstance that it is bestowed by my professional brethren, and that it is held in connection with a Society founded for the special purpose of advancing that branch of medical science upon the study of which my lifelong thoughts and energies have been centred. When, indeed, I was nominated by the Council for the office of President, I felt much diffidence as to the propriety of accepting their flattering proposal, for I thought it quite probable that some other member might, perhaps, occupy the Chair more advantageously for the objects of the Society. Looking at the ability of your former Presidents, and the admirable manner in which each of them has performed his duty, I feel that I have a difficult task before me; but I shall use my best efforts to promote the objects and prosperity of the Society, and I trust that I may be able, at the close of my period of office, to transmit it to my successor with prestige undiminished and dignity unimpaired. In this effort, I well know that I shall be ably and cheerfully assisted by the executive officers of the Society, and I also feel assured that I may count upon your individual and collective support.

It has been customary for the President to address some preliminary words to the Society at the first meeting after his election. I feel that on the subject of clinical study I can add nothing to the wise and thoughtful words you have

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already heard from my predecessors, neither can I pretend to the eloquence which some of them displayed; therefore, during the short time for which I shall occupy your attention to-day, I propose to take a humbler, though, I trust, not an altogether unprofitable, theme.

The Clinical Society has now entered on its twelfth session, and this appears to me a suitable occasion for inquiring into the nature and character of the work which it has done, and of ascertaining how far it has fulfilled the intentions with which it was founded. From such a retrospect of its past labours we may perhaps form some forecast of the direction which its future efforts should take. That the Society has, in some senses, been eminently prosperous you are well aware. The report of the Council, read at the annual meeting a fortnight ago, was in this respect quite satisfactory: it showed how largely our numbers have grown, while the increasing interest manifested in our meetings indicates that the work done is generally approved. It is not, therefore, from any doubt or suspicion of failure that I propose this inquiry, but rather in the hope that we shall thereby be encouraged to make still greater efforts in future.

The Society was founded professedly for the cultivation and promotion of practical medicine and surgery, by the collection of cases of interest, especially of such as bear upon unsettled questions in pathology and therapeutics. The field of its prospective labours was therefore a very wide one, for I suppose the time will never arrive when there will cease to remain such questions as yet unresolved; but it could not well have been more restricted, for a field that did not comprise the whole extent of clinical research would scarcely have justified the formation of such a society. Our rules lay down more definitely the mode in which the main purpose of the Society is to be carried out. Communications of two classes are to be received. Those of the first class are to consist of written reports of cases already complete: written, in order that they may be accurate and definite, drawn up after a certain plan, in order that they may comprise every important particular. Communications of the second class are to consist of cases still under observation, and this class of papers was mainly designed to afford an opportunity for appointing a small committee of members to assist in drawing up a full record of the case. It is further provided that every communication shall con-

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clude with explanatory remarks by the author; it being presumed that he is the most competent person to afford an explanation of the nature of the case he has observed, and of its bearings either upon pathology or treatment, and to draw from it whatever lessons it is capable of affording. The history of the case is thus kept, as much as possible, separate from the opinions and conclusions deduced from its study. The facts accurately related would thus, it might be hoped, constitute a record valuable for future reference, even though the inferences drawn from them, at the time of their occurrence, should subseqeuntly be set aside. It is obvious from these regulations that the founders of the Society had not only a definite idea of what it was to aim at doing, but also took considerable pains to secure the accuracy and completeness of the work to be performed. For more efficiently carrying into effect the object of the Society, it was resolved, at an early meeting of the Council, that the President shall have authority to nominate, from time to time, committees consisting of not fewer than three members of the Society, for the purpose of carrying out the investigation of clinical and especially therapeutical questions.

Now let us endeavour to ascertain how far these plans have been successful.

With regard to the first class of communications, it has occurred, as might have been expected, that they have formed by far the greater proportion of the papers read at the meetings; and I venture to say that it is impossible to read the volumes of our 'Transactions' without observing that they have been, for the most part, extremely interesting, and mainly in accordance with the scheme of operations laid down in the laws of the Society. This has been largely due to the energy, zeal, and good judgment of the several gentlemen who have successively held the office of secretary; and, whilst referring to the services of these gentlemen as a body, I cannot help specially naming our first medical secretary, Dr. Burdon-Sanderson, without whose active co-operation the Society never would have existed, and to whose logical and strictly scientific cast of mind, we mainly owe whatever is best in the original scheme of the Society's operations. Having latterly devoted himself, almost exclusively, to another kind of scientific work, in which I need scarcely remind you he has gained a world-wide reputation, we have unhappily lost him as an active fellow-worker among us; but I know that we still have his cordial sympathy in our

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labours, and feel sure that we may count upon his assistance on any suitable occasion.

It would manifestly be impossible to mention the many communications of this class in detail; but I may perhaps, without impropriety, refer to a few of them as illustrations of the work that has been done. I must, however, premise that I shall select them without any view to their comparative excellence, but solely because they relate to cases which possess some special pathological or practical interest.

At our second meeting, held on January 24, 1868, important communications were presented by Drs. Hermann Weber, Murchison, and Burdon-Sanderson, upon 'Sudden Death in Rheumatic Fever, with Excessive Temperature.' These cases were read here some months prior to the publication of our associate Dr. Wilson Fox's very interesting monograph on the same subject; and, with the exception of three cases published in the *Medical Times and Gazette* by Dr. Ringer in 1867, they were, I believe, the first brought before the profession in this country. Several other cases of high temperature, either in rheumatic fever or other diseases, have been subsequently communicated to the Society, by Drs. Hermann Weber, Southey, and C. T. Williams, and gave rise to very interesting discussions upon the use of cold baths in the treatment of hyper-pyrexia.

At the first meeting in our second session Mr. Hulke read the history of a case of ichthyosis of the tongue, upon which epithelioma supervened. I believe I am correct in stating that this was the first instance of the kind ever recorded, though our 'Transactions' contain similar cases, reported at later dates, by Sir James Paget and Mr. Brown.

The volume for 1868–9 also contains a valuable paper by Dr. Peacock, giving an analysis of 146 cases of acute and sub-acute rheumatism, made chiefly in reference to the proportion of cardiac complications. Coming from so distinguished an authority on diseases of the heart, and founded on such an extensive experience, this paper cannot fail to be of permanent value.

Among our more important and interesting communications, in an etiological and pathological point of view, was a case recorded by Mr. Langton in 1877. It was one of cutaneous eruption contracted by a groom from attending to a horse with cracked heels; and it singularly corroborates the facts adduced by Dr. Jenner, showing that the affection in the heels of horses called 'grease' is capable of exciting,

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in the human subject, a disease which exactly resembles cow-pox, and which, like it, is shown by Jenner to afford protection from the contagion of small-pox. Neither must I omit a passing reference to Sir William Gull's very striking cases of anorexia nervosa that appear in our seventh volume of 'Transactions.'

Diseases of the skin and of the nervous system have, of late years, attracted a large share of the attention of some of our most active and ablest workers. Upon the latter subject, especially, we have had many admirable and most valuable communications, far too numerous to allow of detailed mention in the brief time at my disposal; and, where all have been excellent, it would be manifestly improper to make any selection.

We have had many very interesting surgical papers, upon which I do not feel myself altogether competent to offer an opinion; but I may refer to those on aneurism, in various situations, as appearing to me peculiarly valuable. Whilst upon this subject, papers in the fifth and seventh volumes of our 'Transactions' seem to deserve special mention. In the first of these papers Dr. Cockle relates a case of aneurism of the thoracic aorta, in which Mr. Heath tied the left carotid artery with a view to producing consolidation of the contents of the aneurismal sac, and bringing about what Mr. Holmes happily calls 'a practical cure.' In the second of these communications, Mr. Holmes reports a similar case, in which he also tied the left carotid artery for aneurism of the thoracic aorta. Both the patients were exhibited here, and in both of them the result of the operation was 'indubitable and very marked relief.' Mr. Heath's patient lived for several years after the operation, and appears to have died in consequence of resuming hard agricultural labour, which brought on a recurrence of his disease. An instance, reported in our seventh volume by myself, of spontaneous cure of thoracic aneurism, where some of the distal arteries were obliterated, seems to lend great support to the propriety of this operation.

Few important novelties in surgery have failed to be brought forward at our meetings. Mr. Pollock communicated to us in 1870 a series of fourteen cases in which he had practised skin-grafting, or transplantation, in patients suffering from indolent ulcers; and, on the same occasion, Mr. Lawson read the history of two similar cases. These cases were treated in the wards of St. George's and the

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Middlesex Hospitals, soon after M. Réverdin originated this plan of treatment, and were the first of the kind recorded in this country. Papers on Esmarch's method of preventing loss of blood in surgical operations were brought before the Society by Mr. Henry Arnott in 1873, and subsequently by Professor Esmarch himself in the following year.

The modes of preventing hæmorrhage by acupressure, torsion, and various kinds of ligatures, were also fully discussed at several of our meetings; the subjects having been introduced by the late Mr. C. H. Moore, and by Messrs. Cooper Forster, Callender, Gant, and Bryant. The employment of Sayre's jackets in the treatment of spinal disease, was recently advocated by Mr. Berkeley Hill; and the management of wounds, on plans calculated to prevent the occurrence of erysipelas and other diseases arising from uncleanliness, was brought before us at a very early date by our late valued coadjutor and vice-president, Mr. Campbell de Morgan, by Mr. Durham, and again more recently by Mr. Callender, showing that our London hospital surgeons are as keenly alive as any others to the necessity of guarding against, and as successful in averting, such untoward sequences to surgical operations. Whilst upon this subject I must not omit to mention that one of my predecessors in this chair, Mr. Prescott Hewett, showed conclusively in one of his addresses that pyæmia, one of the diseases said to be caused for the most part 'by hospital air and the aggregation of surgical cases in the wards of our large hospitals,' occurs also, sometimes, in patients placed in perfect isolation, in good houses, well ventilated bedrooms, and, in fact, to all appearance under the most favourable conditions. This would seem to indicate the existence of some state of the patient predisposing him to the disease, or possibly some peculiarity of season favouring its development.

As regards therapeutics, which was one of the departments to the advancement of which it was hoped the Society would conduce, I may refer to cases recorded in our 'Transactions' by Mr. de Morgan and Mr. Hulke, on the treatment of cancer by condurango, showing the uselessness of that once much vaunted remedy; also to communications upon the value of nitrite of amyl by inhalation in angina pectoris, by the late Dr. Anstie and by Dr. Brunton. I need scarcely say that these latter communications have borne good fruit, as many of us have doubtless found in the treatment of that disease.

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One feature of our 'Transactions' must not be overlooked; it is that we have often had a succession of communications on the same subject. I have already referred to those upon aneurism. We have likewise had several instructive papers on the treatment of ascites, communicated by the late Dr. Hillier, and by Drs. Bristowe, Henry Thompson, Robert Liveing, and Day; and others, on the employment of tapping in pleuritic effusion, by Mr. Berkeley Hill, and by Drs. Douglas Powell, John Murray, Cayley, and Broadbent.

If the work done by the Society in the form of papers upon cases already complete has been ample and satisfactory, that done by committees has been, I think, less than might have been expected. In looking through the volumes of 'Transactions,' I find only eighteen reports made by committees upon individual cases. No less than seven of these were made during the first brief session of 1868. Of the remainder, seven only were founded on cases brought forward with the view of being submitted to the consideration of a committee; the other four having been upon cases referred to a committee for examination, on account of some doubt being expressed by the Society as to the deductions drawn by the authors from the facts they related. The perusal of these reports well shows the advantage of submitting suitable cases to the investigation of committees, consisting of members selected for their special knowledge of the subject under consideration. Seeing how largely the 'Transactions of the Pathological Society' have been enriched, and doubtful questions of morbid anatomy elucidated, by the reports of the 'Morbid Growth' and other committees of that Society, I cannot help feeling that we have not, in this respect, carried out our programme so fully as might have been desired.

One of these reports on vaccino-syphilis touches on a subject so important as to merit special notice. It was founded on a case which, if not, as I believe, the earliest authentic case of the kind, was at least one of the earliest recorded in this country, and preceded by several months the more extended and complete groups of cases communicated by Mr. Jonathan Hutchinson to the Royal Medical and Chirurgical Society. Such instances are, in fact, so exceedingly rare that, whereas successful and healthy vaccinations can be counted by millions, these mischances—if I may employ such a term for unhappy results which can be entirely avoided with due care—can only be reckoned by units. The facts contained in these papers indubitably prove that carefully

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conducted vaccination cannot convey syphilis, even when the vaccinifer happens to be the subject of that disease. In Mr. Smith's case only one of the four punctures was infected with syphilis, the other three having escaped, although they presented the proper appearances of vaccination. Mr. Hutchinson's wider experience leads him to the conclusion—which is, indeed, but a necessary deduction from the facts he has so clearly recorded—that the vaccine virus and the syphilitic virus were present in totally different fluids, and that the one might be conveyed in all its vigour without any admixture of the other. He shows that it is 'quite possible for vaccine lymph and blood to be transferred at the same time, and for each to produce its specific results;' but, on the other hand, that, by suitable precautions, it is no less 'possible to vaccinate successfully from a syphilitic infant, in the utmost stage of potency as regards its blood, without communicating syphilis.'

Two most important lessons are deducible from the history of these cases: the one, that the greatest care should be exercised in the selection of children from whom vaccine lymph is drawn; the other, that it should be the rule, in every case, to use only the transparent lymph drawn from pustules at the proper stage of the disease, and that whenever blood is accidentally drawn by the puncture, the lymph from that vesicle should be rejected. I repeat, due attention being paid to these precautions, and also to the health of the child proposed to be vaccinated, 'small-pox'—in the words of Mr. Simon—'need cause no further fear, nor its antidote be accepted with distrust.'

I hope that I may be pardoned this digression, springing out of the reference to Mr. Smith's paper, on account of the great importance of the subject. Of the many blessings conferred on mankind by the art of medicine, none probably has been so widely beneficial as the discovery of vaccination. It is not too much to say that it has been the means of saving hundreds of thousands of lives, which would otherwise have fallen victims to small-pox, and prevented millions of persons from life-long disfigurement. Those among us who can carry our recollection back far enough cannot fail to be struck by the inconsiderable number of persons now met with who present the seared visages so common a consequence of small-pox among the members of the older generation forty years ago.

The discussions consequent on the reading of commu-

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nications have formed a very useful part of our proceedings; they have been most interesting, and have rarely failed to develop and add to the value of the subject under consideration; indeed, they have in many instances possessed a very high degree of merit. It would be impossible to dwell at length upon this part of our work; but I may be permitted, amongst so many that have been good, to refer especially to one on so-called fibroid phthisis, held upon a paper read by Dr. Andrew Clark at one of our early meetings; to the discussion, already referred to, on the employment of cold baths in the treatment of hyper-pyrexia; to that on pyæmia, held after one of Mr. Prescott Hewett's addresses; to that on the use of salicin and its congeners in the treatment of rheumatic fever; and also to those on several important surgical questions; and especially to recent discussions on the subjects of aneurism, rodent ulcer, and gastrotomy, as having been in my opinion both excellent and most valuable. The interest taken in some of the discussions has been so great that the propriety of printing them, either in full or in abstract in the 'Transactions,' has been more than once suggested to the Council, who have, however, uniformly, and I consider judiciously, negatived the proposal.

Only four committees have been appointed by the President, under the regulation passed by the Council at one of its early meetings. Two of these have reported, two are still sitting, but we hope to receive their reports during the present session. One of the latter is inquiring into the 'incubation period of scarlatina, diphtheria, typhoid fever, erysipelas, and allied diseases,' the other into the 'deleterious effects which follow the prolonged and continuous use of chloral in ordinary doses.' From the former of these committees in particular we may hope to receive an important and valuable report. We already know with considerable accuracy the period of incubation that elapses between exposure to the contagion and the evolution of the symptoms in small-pox and measles. It is probable that the period is less definite in some of the analogous diseases which form the subjects of inquiry, and it is also probable that the irregularity may vary among them, and be the greatest in such diseases as typhoid fever and cholera, in which local insanitary conditions are mainly instrumental in spreading the disease. The state of the patient at the time of exposure will, perhaps, also be found an important element in determining the duration of the latent stage.

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Whilst on this subject I may observe that we already have, in the last volume of our 'Transactions,' a most instructive paper on the period of incubation in scarlet fever and some other diseases, by Dr. Murchison, from which it appears certain that this period varies within considerable limits in some of these diseases. If this should be confirmed by the wider inquiries of our committee, it will become very important to inquire into the causes of such variations. Sir William Jenner is chairman of both these committees, a sufficient guarantee that the greatest care and widest experience will be brought to the examination of the facts and opinions upon which their conclusions will be founded.

Of the committees which have already reported, the first was appointed to 'investigate the temperature in syphilis.' It was composed of Dr. Bäumler, Dr. Duffin, and Mr. Berkeley Hill, and their report was read at a meeting of the Society held May 27, 1870. Although that report was only considered by its authors as a preliminary one, they were able to arrive at certain conclusions in reference to syphilitic periostitis and affections about the joints. I think it is much to be regretted that the investigation thus commenced was not extended, either by means of the same or of some other committee, to an inquiry into the characters and peculiarities of the febrile stage accompanying the onset of constitutional syphilis, more particularly the cutaneous eruptions. The other committee to which I referred was appointed 'to investigate the value of quinine as a means of diminishing bodily temperature and pulse in pyrexia.' It comprised Dr. Murchison, Dr. Symes Thompson, and Dr. Hermann Weber; their report was read on May 27, 1870, and is printed in the same volume of our 'Transactions' as that on temperature in syphilis. This report seems to me a perfect model of what such reports should be. On commencing operations the committee laid down a uniform plan for conducting the investigation, and entered the results of each experiment in a tabular form prepared beforehand for that purpose. Discarding a large number of preliminary observations, from which no conclusions could be drawn, their report is founded upon fifty-two cases of various kinds of acute disease, and their conclusions are unquestionably of great value. This committee again regarded their investigation as quite a preliminary one, and suggested a further examination of the subject—a suggestion which I should rejoice to see still carried out.

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And now, gentlemen, in conclusion, what encouragement can we derive, or what suggestions may we gather, from this very imperfect sketch of our past labours to guide our future course? The Society has done good and valuable work. It has given facilities for bringing prominently forward many questions that might otherwise have failed to obtain such wide diffusion. It has been most useful in affording an opportunity for the interchange of opinion, and the free discussion of questions of practical interest; and we must all, I think, feel that these discussions have led us to listen with respect to, and to consider with care, the opinions of others, even though we ourselves may have differed from them. For my own part I can honestly say that I have rarely heard a paper read, or listened to a debate, without deriving from it some valuable information, or some useful practical hint.

But although we have thus good reason to be satisfied with the past, we cannot regard our work as having been altogether perfect. There is still room for improvement, and it would be well for each of us, when drawing up cases to be presented to the Society, to remember the regulations laid down in our laws, and to cast them strictly in the shape therein provided. As regards communications upon cases still under observation, probably my reference to the subject will serve to remind us that, whenever it seems desirable, the Society will be ready to appoint a committee to assist in investigating an unusual case, or to verify uncommon facts. It appears to me, however, that our chief development might advantageously take the direction of making original investigations by means of committees. We have already done so to a limited extent, but such work might with great advantage be increased. Subjects of scientific importance, or of great practical interest, could undoubtedly be satisfactorily inquired into by us. Any report, emanating from a select committee of this Society, would be received with respect, and would unquestionably carry great weight with the profession at large. I may mention, as an illustration, one such subject that occurs to me, which it might have been advisable to refer to such a committee for investigation, some time since, when we had an animated debate upon the use of salicin and its congeners in rheumatic fever. A committee appointed at that time for the purpose of investigating the effects of salicin and its compounds might have aided in placing it in its proper position as a remedy for acute rheu-

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matism. Having by your favour held an important position on the Council since the formation of the Society, I feel myself largely to blame for having allowed so good an opportunity of usefulness to pass by unimproved. We have all probably now formed our own opinions as to the value of salicin from personal experience, for it has, I believe, been largely tried in all the London hospitals, and it is, therefore, perhaps no longer necessary or desirable to institute an investigation which might have been useful and appropriate at an earlier period; but similar opportunities are certain to arise, and I trust that we shall use them, and so assist the advancement of our art.

In the early days of the Society, when its position was less assured than at present, and its pecuniary resources were small, it was necessary to husband our funds so as to provide for carrying on the operations of the Society for a year or two, even though we should on some occasions expend more than the income of the year. This state of things no longer exists. We have accumulated a small capital, and for several years, though our expenditure has been liberal as regards the cost of the annual volume of 'Transactions,' our income has exceeded our requirements. It might now, therefore, be a proper question for the consideration of the Council, whether committees, consisting of not less than three persons, selected from among some of our able and energetic younger members, might not be appointed from time to time to undertake the practical investigation of important subjects, bearing especially upon therapeutics or etiology, receiving from the Society a moderate honorarium for their services. I merely venture to offer this suggestion for consideration 'without prejudice,' as the lawyers express it.

If the Society continues as it has begun, and especially if it aims at doing higher and more complete work, its volumes of 'Transactions' will in the future, even more than in the past, constitute a rich storehouse of information, gathered together for the legitimate objects of the art of medicine—namely, 'the glory of God and the relief of man's estate.'

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COMMUNICATIONS.

I.—*A Case of Fracture of both Humeri, Rupture of the left Brachial Artery, abolished Conductivity of the left Radial and Median Nerves, broken Ribs, and Laceration of the Quadriceps Extensor Cruris immediately above the Patella. Recovery with perfect restoration of the Nerves, and little permanent Injury except some Limitation of the Flexion of the left Elbow-joint.* By J. W. HULKE. *Read October* 11, 1878.

ON February 8, 1876, shortly before ten o'clock A.M., a silver polisher, æt. 36, standing near a machine, had his sleeve caught by a rapidly-turning wheel, which whirled him round and round, his legs striking against the ceiling and floor of the room. It was thought that the wheel made fifty revolutions before the machine was stopped.

He was brought to the Middlesex Hospital. When received into Broderipp Ward soon after the accident, his left humerus was found to be broken in its lower third; it seemed comminuted, but owing to the swelling of the soft parts, the exact circumstances of the fracture could not be precisely made out. The swelling involved the lower half of the arm, and the upper half of the forearm. The skin covering it was much ecchymosed, and the lower half of the forearm and the hand were purplish as if from capillary and venous stasis. The hand and forearm were cold. No pulse could be detected at the wrist in the radial and ulnar arteries, but in the brachial artery a pulse was distinctly perceptible as low as the ecchymosed swelling, in which all trace of the vessel was lost. Here, at the inner side of the arm, was a small wound from which venous blood oozed freely. In front of the elbow and at its inner side were large grazes. Those

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parts of the surface of the hand and fingers supplied by the median and radial nerves were completely insensible. The right humerus was broken at its middle. The end of the upper fragment piercing the triceps nearly traversed the skin. One or more of the middle ribs on the right side were broken near the angle. Both lower limbs were covered with bruises and grazes. The left patella was unnaturally moveable, owing to a large transverse rent in the quadriceps extensor immediately above it.

There was marked shock, but it was less deep than might have been expected from so many and such severe injuries, and it soon passed off.

The broken humeri were secured with splints, the left forearm and hand wrapped in a sheet of cotton wool; the ribs steadied with straps of plaister, the ends of which overlapped the breastbone and backbone; the left lower limb extended and fixed upon a back-splint, and an ice bag laid upon the knee.

On the third day (February 11) a pulse was first detected at the left wrist. His recovery was uninterrupted, and after six weeks (March 23) he was able to leave his bed. A fortnight later (April 5) he became an out-patient. For nearly a fortnight before this passive movement of the left elbow and knee had been daily practised. When he left the hospital he was sufficiently strong to be able to be up all day; he walked firmly, with but a slight limp; and he had already regained considerable use of the upper limbs. The insensibility of the hand and fingers continued.

After this he attended as an out-patient for eight months, during which the joints were exercised and the muscles faradized. Sensation returned very slowly. It is now perfect. He has complete use of the right arm, and of the left leg. Flexion of the left elbow is checked abruptly after the forearm has moved through about 90°. With this exception, the action of the limb is scarcely impaired.

The bearing of this case on the surgical treatment of some nervous disorders of peripheral origin by over-stretching the implicated cords,* and on the question of primary amputation where, concurrently with severe nerve-lesions, the main blood-vessels of a limb are torn, apart from its other circumstances, induces me to submit this case to your notice.

* Paul Vogt. Die Nerventdehnung als Operation in der Chirurgischen Praxis. Leipzig, Vogel. 1877.

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The suspension of conductivity, and its return in the radial and median nerves, are, I suggest, most easily explained by supposing that after the humerus was broken the nerves were over-stretched by the strain then falling on them, beyond the limit of the integrity of their fine structure, but that they were not torn completely through.

The known facility with which a sufficient collateral circulation is established in the upper limb when its main artery is obstructed, and the smaller risk of further hæmorrhage, where the vessel is completely torn across (which was thought to have occurred here), led me to discountenance the proposal of immediate amputation which has been advised under similar circumstances, and to adopt an expectant treatment. The result more than justified the course. The man's abstemiousness—he said he was almost a teetotaller—and his sound health told strongly in his favour.

II.—*A Case of Supra-Pubic Lithotomy.* By Jonathan Hutchinson. *Read October* 11, 1878.

In 1877 I admitted into the London Hospital a young man, æt. 26, who was the subject of a very large calculus. That the stone was large was very easily ascertained, for it could be felt from the bowel, as a huge rounded mass, apparently as big as an orange. He was suffering very severely from pain, with almost constant desire to pass water, and the urine contained blood and mucus habitually. He was pale and thin. He had been obliged for some weeks to desist from work, but on the most careful cross-examination I could not get him to admit that he had experienced any bladder symptoms whatever for more than a few months. Prior to that he had, he said, always been quite well, and wholly free from discomfort.

Knowing beforehand that the stone was very large, we carefully discussed the methods most suitable for dealing with it, and I finally decided, with the concurrence of my colleagues, to employ the supra-pubic operation. As an indication of the impression of size given by the rectal examination, I may state that one of my colleagues wrote to me the day before the operation to advise that I should be prepared with a small pair of midwifery forceps, as he doubted whether it could be delivered by any smaller ones. Mr. Luke

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and Mr. Curling were present at the operation. I encountered no difficulties in its performance. Keeping to the median line and close to the symphysis, the bladder was easily opened. Having cautiously enlarged the incision, I readily seized the stone with the largest pair of lithotomy forceps, and then gradually drew it into the wound; and, finally, after allowing a little time for the structures to yield, extracted it. It was smooth and rounded in all parts, and had no companions. The whole fundus of the bladder was rigid from thickening of its coats and calcareous deposit in the mucous membrane, but the upper part was more healthy and capable of dilation. In the hope of getting the urine to flow through it, I introduced a long drainage tube through the urethra, and brought it out at the abdominal wound. This, however, failed, and no urine ever escaped by the urethra. We had great difficulty in keeping the bladder empty, and preventing constant overflow, and a great variety of expedients were tried with but partial success.

During the first fortnight after the operation the man did well, and his recovery was confidently expected. Then he began to have rigors and a high temperature. The urine became ammoniacal, and in spite of the constant attention of my house surgeon and the use of acid injections, it continued to cause much irritation. Death from pyæmia finally resulted about five weeks after the operation. At the post-mortem the bladder was found contracted and much thickened, and its mucous membrane extremely diseased. The ureters were dilated. There was pus in the pelvis of each kidney, and small pyæmic abscesses in the liver and lungs.

The calculus weighed a little more than six ounces. It was flattish and of triangular form with the angles rounded. Its greatest girth was seven inches and a half, and its least seven.

Remarks.—One of the features of interest in this case consists in the fact that the unusual size of the stone was recognised before the operation, and the supra-pubic method was deliberately selected on that account. In many cases of supra-pubic operation the surgeon has adopted it without any special necessity in this direction and for calculi which could easily have been removed by the ordinary method. So also in a large majority of cases of calculi of extraordinary size, the surgeon recognises that fact only after the operation has been commenced, and when there are obvious reasons for preferring, if possible, to complete it by the plan which has

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been begun. The fatal result in this case may have been to some extent a matter of accident, and not connected with the special method. The man died of cystitis, nephritis, and pyæmia, and this last complication may follow any operation. Still, making all allowance on this head, I may acknowledge that the case has not impressed me very favourably as to the supposed advantages of the high method. The operation in itself was easy enough, but the trouble came when we had to deal with the overflow of urine which collected in the depending cavity. Had a perineo-rectal operation been done the urine would have escaped more easily, and possibly the bladder would have had a better chance of recovering its natural condition. Had it not been for the fear of a rectal fistula, I should certainly have preferred this method, and my feeling is that in any future case I shall do so in spite of this drawback.

III.—*A Case of Bullet Wound of the Skull.* By R. Clement Lucas, B.S. *Read October* 11, 1878.

H. N., æt. 21, was admitted into Guy's Hospital on February 2, 1878. His parents were living and healthy; and there was no history of insanity in the family. He was a clerk in a solicitor's office, and engaged to be married.

On Thursday, January 31, he had some disagreement with his *fiancée*, which led him to declare that when he received his salary he would buy a revolver and shoot himself. He visited his betrothed again on Saturday, February 2, and left apparently on good terms with her; but some hours later he was found drunk and disorderly outside the 'Elephant and Castle,' and was removed and locked up by the police. Soon afterwards shots were heard, and, when his cell was visited, he was found lying on the ground in a pool of blood, with a revolver by his side.

The revolver was a small one, of French manufacture, and carried pin-fire cartridges. Five of the chambers had been discharged, and one cartridge, carrying a small conical bullet, remained unfired. Two bullets, which had been discharged at the iron door, were picked up in the cell; two were afterwards extracted from the skull, and one remains unaccounted for. It is probable that this had been fired previously, to test the instrument soon after it was purchased.

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He was brought to the hospital about half-past eleven in the evening in a semi-conscious state. Almost in the centre of his forehead were two small circular holes, with slightly inverted edges. Except at the immediate edge of each aperture, there was no blackening of the skin, indicating that the mouth of the pistol was applied directly to the forehead. The skin surrounding the bullet-holes was raised into a rounded eminence. When I saw him he had so far recovered consciousness as to stand without assistance. There was some bleeding from the nose as well as from the wounds. Chloroform was administered, and a crucial incision made over the wounds. On turning back the flaps, a blackened cavity was opened beneath the skin, formed by the expansion of the powder after it had penetrated the integument.

At the bottom of this cavity a somewhat cruciform aperture was seen in the bone, and lying upon the internal table were the two flattened bullets shown.

The internal table was driven back so as to give the appearance of a sinus, in which the bullets were lying loose; and, at the time, we were under the impression that the man had very large frontal sinuses, which had been opened by the bullets.

After removing numerous fragments belonging to the external table and diploe, the splintered internal table forming the posterior wall of the cavity was also removed. This came away in large, sharp-edged, angular fragments, two of which were grooved by the longitudinal sinus.

When the internal table had been removed, the dura mater was seen at the bottom of the wound, bulging somewhat on either side of the longitudinal sinus, and pulsating. The membrane was entire, except at one spot, where there was a small aperture just such as might be made by stabbing the point of a penknife into a sheet of paper. But for this small puncture, it is not improbable that he would have recovered.

The upper part of the wound in the skin was brought together with silver sutures, and the lower part was left open for drainage. Antiseptic dressings were employed.

On the following morning, February 3, he seemed pretty well; he was conscious, sensation and motion were perfect, but he complained a great deal of pain in the back of the neck. His temperature at 11 A.M. was 99°, but in the evening at 9.30 P.M. it rose to 99·8°, and his pulse was 96. He

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was confined to milk as diet, and ice was applied to his head.

February 4.—The wound was dressed. Primary union was found to have taken place at the upper part, but a considerable amount of discharge was found below. There was a good deal of œdema of the eyelids. He complained greatly of pain in the neck, for which no cause could be discovered. His temperature in the morning was 100·2°, and in the evening it rose to 102·1°. His pulse was 100, full and regular.

February 5.—His eyelids were swollen so that he was unable to open his eyes. His bowels acted voluntarily and freely. He was very irritable all day, and disliked to be spoken to. Towards evening he fell into a drowsy, semi-unconscious state, and his breathing became noisy and almost stertorous. In the morning his temperature was 102·4°, and the pulse 100, and though in the evening the temperature fell to 102·2°, and the pulse to 98, his respiration rose to 25, and his general condition was much worse.

February 6.—The patient was quite unconscious and very restless. He was found to have passed urine under him, and in the night he had been noticed to have slight general convulsions. His right arm was found to be rigid. The right leg was flaccid and apparently paralysed, whilst the left leg was rather rigid. The wound, which was dressed every day, was discharging grumous-looking matter. In the morning his temperature was 104°, pulse 104, and respiration 34. In the evening the temperature rose to 104·8°, pulse 104, and respiration 34.

February 7.—He remained unconscious, and passed his motions and urine under him. The muscles of the right arm were very rigid, those of the left paralysed. His temperature at 10 A.M. had fallen to 102·4°, the pulse was 120, and the respiration 30, laboured and noisy; but during the day the temperature rose rapidly. At 1 P.M., temp. 104°; at 5 P.M., temp. 105·8°. At 7.40 P.M. he was placed in a bath, the water being 90° F. At this time the patient's temperature was 105·6° in the axilla and 108·6° in the rectum. The bath was gradually cooled by means of ice to 73° F. When he was removed, after being immersed 27 minutes, the temperature was found to be 103·4° in the axilla and 107·2° in the rectum.

After removal to bed he was thought to be improved, his

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conjunctivæ being more sensitive and his pulse steadier. He was also able to swallow.

The temperature continued to fall for about an hour after the bath. At 9.10 P.M. it was only 100·9°, but it soon after began to rise again. At 10.30 it was 104·1°, and at 12.15, 105°. He died about 3 A.M. on February 8.

At the post-mortem examination an aperture was found in the frontal bone, somewhat cruciform in shape, 1 inch by ½ inch, almost in the centre of the forehead. It was just above the frontal sinuses, which were opened by the lower edge of the wound. A small aperture was seen in the dura mater, and the part exposed was coated with sloughy granulations. The frontal sinuses contained pus.

The internal table of the skull was broken away some distance further than the external. There was general suppurative meningitis extending over the surface of the right hemisphere and the anterior half of the left. The cavity of the arachnoid also contained pus.

The base of the brain was injected, and lymph extended down in the right Sylvian fissure nearly to the quadrate space.

The anterior part of each orbital lobe was bruised, ecchymosed and softened. Elsewhere the brain was healthy.

The other organs were all healthy except the lungs, which were congested and œdematous, and the spleen, which was rather soft.

Remarks.—The patient was unhappy in the site he selected to fire at when attempting to commit suicide, for though the bullets had been propelled with sufficient force to flatten their cones till their mushroom-like edges were on a level with the bases, the internal table of the skull had not been penetrated, but simply splintered and driven back. One of these splinters had unfortunately punctured the dura mater, and to this puncture, rather than to the bruising of the anterior lobes, I am inclined to attribute the subsequent meningitis. The commencement of meningitis was indicated after about forty-eight hours, by a rise of temperature to 102·1°, and a full pulse of 100. During this time he remained conscious and rational. The following morning he became irritable and restless, not caring to be spoken to, and towards evening fell into a drowsy semi-unconscious state accompanied by heavy breathing. The temperature on this day remained about the same as on the previous evening. During the third night he was noticed to have slight

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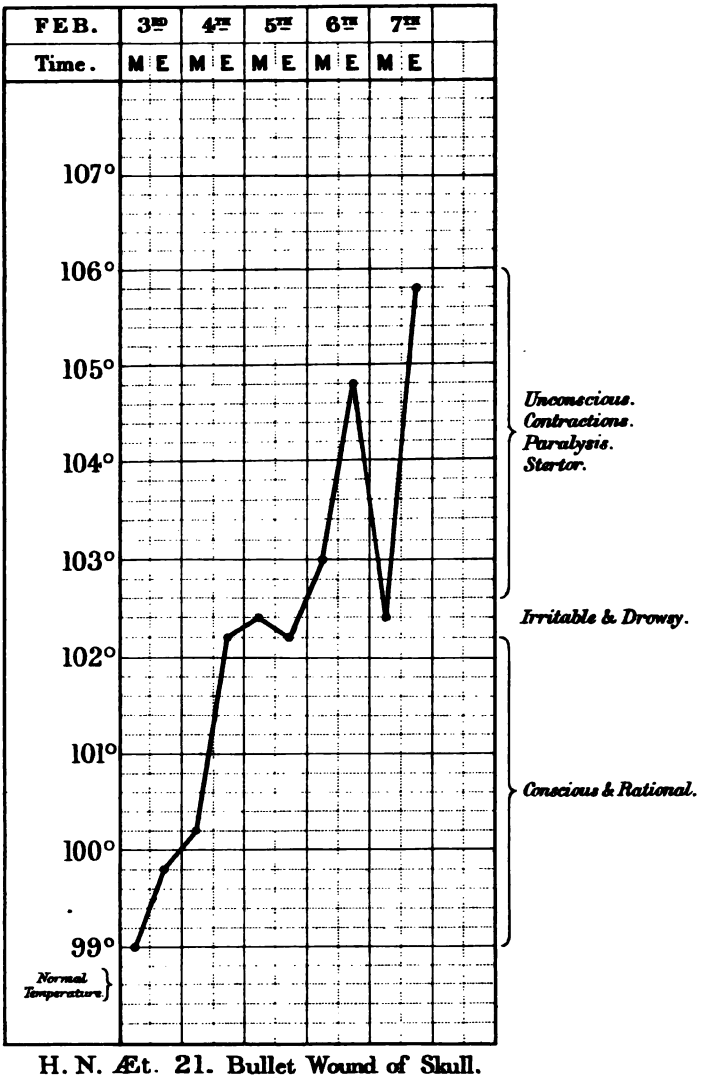

H. N. Æt. 21. Bullet Wound of Skull.
(Traumatic Meningitis.)

Mintern Bros lith.

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general convulsions, and on the fourth day his temperature had risen to 104°. There was now complete insensibility, with stertorous breathing, mixed rigidity and paralysis, and loss of control over the sphincters. On the fifth day the temperature rose gradually to 105·8°, and though reduced by a cold bath it again rose, and he died early on the sixth morning. The accompanying chart is almost typical of acute meningitis.

IV.—*A Case of Supra-Pubic Incision into the Bladder for the Relief of Traumatic Stricture caused by Compound Fracture of the Pelvis.* By H. G. Howse, M.S. *Read October* 25, 1878.

ALFRED B., æt. 22, was admitted under my care into Guy's Hospital, on September 15, 1877. He is a healthy young man, a miner by occupation, is married, and has two children. Seventeen months before admission a large stone, weighing half a ton, fell from a height of about four feet upon his right ilium, he being at the time in a stooping, half-sitting attitude, with the body inclined to the side. He was thrown down, the left ankle being dislocated, and at the same time he sustained a severe compound fracture of the pelvis, and rupture of the urethra. The wound of the compound fracture was situated at the junction of the right thigh and perinæum, so that there must have been very great displacement of the fractured pelvic bone at this spot. He was taken to Nottingham Hospital (a distance of nine miles) immediately, and believes he passed urine through the wound while being conveyed there. In hospital the dislocation was reduced, and the limb put in splints.

Very shortly after admission, Dr. Marshall, the resident surgeon, passed a catheter quite easily, and drew off some clear urine. This was not kept in, but next day another catheter was passed with rather more difficulty, and this was fastened in and retained for twenty-four hours. Subsequently, however, it could not be re-introduced.* Through

* Dr. Marshall tells us that his impression was that the urethra was not perfectly torn across at the time of the accident, but that it became so subsequently to his admission to the hospital, from movements of the patient's body in the delirious state in which he lay for many days. He was led to this conclusion from the ease with which he passed the catheter at first, and the subsequent utter impossibility of doing so.

This is not at all improbable. Supposing the urethra were torn across all

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the second catheter blood and urine were discharged, and the patient says that a fair amount used also to pass beside the instrument. This was regarded at the time as of less consequence, as the patient's general state appeared to be so bad that there seemed little or no chance of his getting over his accident.

About this time two abscesses formed in the right groin, from which urine was discharged. Subsequently he improved, and learnt to retain urine in the bladder for a couple of hours at a time, but, when passed, it nearly all flowed from the sinuses, though a little would be discharged *guttatim* from the penis. Attempts at catheterism, which were frequently made at this period, used to cause sickness and rigors a few hours after the attempt. He now left the hospital, after having been an in-patient for 29 weeks, and went home for change of air.

After a couple of months' stay at home, he was readmitted in very much the same condition. Fresh attempts at catheterism were made, but unsuccessfully. Other abscesses opened in the groin and about the left testis, and, rather later, chloroform was given, and a No. 4 gum-elastic catheter was successfully introduced from one of the sinuses into the bladder. A few days after this, chloroform was again administered, and perinæal section was performed with this catheter as a guide; a No. 9 gum-elastic catheter was now introduced into the bladder from the median line of the perinæum. This continued in for a considerable period, being changed every week or ten days. After some time difficulty began to be experienced in introducing an equally large-sized instrument, so that at first No. 7 and then No. 5 had to be substituted, and finally it was found impossible to introduce any instrument at all, in spite of the long-continued and most persevering attempts on the part

except a band on the anterior wall, the first effect of the accident upon the connecting band (already bruised and lacerated by the injury) would be that violent inflammation would be excited in it. The effect of inflammation upon any tissue is to make it softer and more lacerable. In this state the connecting band would be much more likely to snap across by movements of the patient's body, especially if there was a rough edge of fractured ramus of pubes or ischium in the immediate neighbourhood, as in this case. Or it even might be caused by attempts at catheterism on the second or third day after the accident, when the softening effects of the inflammation would have fully developed themselves. This line of reasoning tends to the inference that in these cases of partial rupture of the urethra it is the best treatment to pass a large catheter for the patient immediately after the injury, to tie it in, and leave it for some days until the inflammation has subsided, and the urethral wall has returned to its normal condition of toughness.

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of all the surgeons concerned. He left the hospital again at the end of six months' stay in very much the same condition as when he entered. Once again he took chloroform at his own home, with the view of getting a catheter passed into the bladder; but this also failing, he was sent up for admission into Guy's.

When examined by me two sinuses existed, one nearly in the median line of the perinæum, the other to its right side. From both of these urine was expelled in micturition, but a little also passed, drop by drop, through the natural passage. Cicatrices of old abscesses were also present in the right groin, where there appeared to be much dense fibroid tissue, as well as some enlarged glands. The right ischial tuberosity was unduly prominent, and from the perinæum a dense mass of cicatrix could be felt, drawing the median raphé over towards the right side, and otherwise distorting the natural appearance of the part, so that it was difficult to say what was the real median line of the perinæum. This fact, as will be seen subsequently, rendered the operative surgery of the case much more difficult than it would otherwise have been. By sounding, the natural penile urethra appeared to come to an end at the commencement of the membranous portion, and all attempts to pass instruments beyond, of whatever kind, failed with me as they had previously failed in the hands of others.

Seeing this, I resolved to make an attempt to reach the bladder through the sinuses, and so, on September 18, chloroform was administered, the sinuses carefully probed and partially slit up. It was found, however, impossible to reach the bladder in this way. The whole of the perinæum was found to be one dense mass of fibroid cicatrix, through which any further operation at that time was deemed inadvisable, until the incisions already made should have healed.

This speedily took place, and by the end of the first week in October he was up and about the ward. I resolved now to try to reach the bladder by means of 'Cock's operation,' i.e., opening the urethra at the apex of the prostate from the perinæum without a guide. On October 18, accordingly, chloroform was again given, and with the patient in the lithotomy position, the knife was passed straight into the median line of the perinæum (as far as it could be made out), and down into the apex of the prostate gland. On withdrawing the knife and passing the probe-

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pointed director, it was found that the urethra had not been opened, so that it was impossible to introduce anything into the bladder. By this operation it was rendered clear that the prostatic urethra was not in its normal position. Unwilling to introduce the knife a second time, thus possibly making a second cut parallel with the first, whereby the risk of sloughing (especially in such dense cicatricial tissue) would be materially increased, I sent the patient back to bed to allow time for the part to close.

On November 23 (the perinæum having resumed its former state) I performed cystotomy upon the patient in the following manner:—When under the influence of chloroform, he was placed in the lithotomy position, and the knife again introduced into the perinæum as in the previous 'Cock's operation,' but this time rather to the right side of the median line, with the hope that the prostatic urethra might be found drawn over to that side by the contraction of all the cicatricial tissue existing there. On reaching the apex of the prostate, where it was believed the urethra ought to be, the knife was not withdrawn, but given into the hands of an assistant to hold steadily in position. A probe-pointed director was now introduced by the side of the knife, and the urethra felt for, but unsuccessfully. It was evident that the knife had again failed to open this canal. The probe was accordingly withdrawn, and the knife passed straight on into the bladder through the substance of the prostate. A catheter was then readily introduced into the bladder. In this way all risk of a second incision was avoided, and we obtained a second chance of opening the prostatic urethra.

The relief of the patient following this operation was so considerable, that, though I had not at first intended doing anything beyond obtaining for him a free exit for the contents of the bladder, I determined to see what might be done by joining the new prostatic canal on to the old penile urethra. On December 18, accordingly, a grooved sound was passed down the penile portion of the urethra to the stricture, and this was opened into the perinæum. An attempt at that time, however, to connect the old with the new urethra failed on account of the extreme rigidity of the cicatricial tissue, through which it was necessary that the catheter should pass; but this was accomplished on the 29th without much further trouble—an india-rubber catheter being passed all the way from the meatus urinarius into the bladder.

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For a considerable period after this date nothing more was done except changing the catheters every week or ten days. By the beginning of March the new urethra appeared to be establishing itself satisfactorily. About this time his convalescence was impeded by a rather severe attack of cystitis, attended with the discharge of much blood, produced apparently by his getting out of bed and taking a good deal of exertion (aiding the nurse to sweep the ward, &c.) with a rather stiff gum-elastic catheter in him—a thing quite forbidden. This left an irritable condition of the bladder for some time. Towards the end of April we began trying the effect of leaving the catheter out for short periods to see to what extent the new passage would contract, and how he was able to pass urine down it. At first, micturition by the new passage seemed satisfactory, and we began to hope for the best results; but on May 25 a new phenomenon manifested itself. When he *began* to micturate, the urine flowed through the passage with a rush, and then after a few seconds the stream suddenly stopped altogether, and would not again flow until the catheter was used. (This he had now learnt to pass himself.) This phenomenon repeated itself so often that it became evident that it had some constantly present cause. Reasoning upon what this might be, I came to the conclusion that probably the new urethra ran very close to and parallel with the original passage through the substance of the prostate:—that in the act of micturition the muscular fibre around the orifice of the new urethra probably relaxed first, and permitted the urine to flow down it; but that subsequently the muscle around the neck of the bladder and normal urethra also relaxing, allowed the urine to pass down into the old prostatic urethra (now converted into a cul-de-sac), and the distension of this portion of the urethra pressed upon and acted as a valve, obliterating for a time the passage of the new urethra. Hence, if I could only make use of this old piece of the unobliterated prostatic urethra by opening it into the new membranous urethra, it appeared probable that the cure of the case would be completed. This, however, did not seem possible, unless I adopted the principle of the old supra-pubic lithotomy. Thus, opening the bladder from the front, I might introduce a long curved sound into the prostatic urethra from the vesical side.

I was the less unwilling to attempt some operation of this kind, owing to the fact that catheterism along the

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whole length of the canal had always been difficult both to him and to us. And on two or three occasions this difficulty was such that we had to give the patient chloroform before we could re-introduce the catheter. This difficulty arose from the new prostatic canal making too sharp an angle with the new membranous urethra. Upon this angle the catheter would catch, and it was often very difficult to steer it round the projecting point.

While debating as to the justifiability of such an operation, and considering the means which I could adopt for rendering the risks of it less by making it an antiseptic proceeding, I heard that some such operation had been performed at St. Bartholomew's Hospital some years ago successfully, and that it was likely to be repeated there again very shortly. Although not then acquainted with the details of this successful case, I yet thought that the facts known to me about my own patient would enable me to make a successful antiseptic operation of it. Several experiments in the post-mortem room convinced me of the ease with which a distended bladder could be opened, and a long curved sound introduced into the prostatic urethra from the neck of the bladder, and with what facility it might then be felt and reached from the perinæum.

Accordingly, on June 26, the patient being under chloroform, the bladder was thoroughly washed out with thymol solution (1–1000), and was then distended with as large a quantity of the same solution as it would bear. A vertical incision was then made through the abdominal walls immediately above the pubis, about 1½ inch long, and the parts carefully incised down to the bladder. Some difficulty was at first experienced in recognising the bladder on account of its not projecting against the front wall of the abdomen so markedly as it had done in all the post-mortem experiments, but the appearance of its muscular coat soon settled the question. One or two double gut sutures were then passed through this coat on either side, and the viscus punctured between them. The thymol solution distending the bladder immediately welled up freely into the wound, and could be recognised by the smell. A long curved sound was now introduced into the bladder, and very readily passed into the prostatic urethra, where it could be felt with the finger in the rectum, though not from the perinæum. The reason of the difficulty in the earlier operations was now evident. The sound was evidently very considerably out of the median

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line towards the right side, so that even in my second attempt to reach the prostatic urethra from the perinæum I had missed it from not being sufficiently over to the right side. The patient was now put into the lithotomy position, and the perinæum was incised until the end of the sound was reached. A grooved director was then introduced into the bladder, and upon this a No. 12 gum-elastic catheter was subsequently passed and tied in. Previous to this, however, the large curved sound was removed from the hypogastric incision, and the opening into the bladder (which had now, from the emptying of the viscus, contracted down to a very small size) was closed by drawing the sutures of one side over to the opposite side, by means of the other double sutures, as in a cleft-palate operation, thus tying the external surfaces of the bladder together over the incision. The external wound was not closed by sutures, as I was doubtful at this time how far the bladder incision would unite primarily, and feared, from all I had read of hypogastric lithotomy, the possible results of urinary infiltration if the skin incision were united at all closely. The hypogastric incision was then dressed with carbolic gauze in the usual way—the whole of the operation having been conducted under carbolic spray, though it was only possible to keep up the antiseptic dressings perfectly over the abdominal wall.

As a result of this operation, the abdominal wound rapidly granulated up. No escape of urine ever took place here, and it had entirely skinned over in four weeks' time. On July 24 chloroform was again given, and a catheter was passed down the penile urethra, and thence passed on to the prostatic urethra and bladder. On August 12 he is reported as up and about the ward; and on September 2, on my return from my summer vacation, he showed me that he could withdraw the catheter and re-pass it himself without trouble, and that, moreover, he could pass a full-sized stream of urine without the catheter, and without any impediment such as he had previously experienced.

At the present time he is able to pass a full-sized stream of urine whenever he wishes. He can retain his water for 3½ to 4 hours at a time. He generally passes a No. 9 gum-elastic catheter for himself twice in the 24 hours, to keep the new passage quite patent, and wears it from a quarter to half an hour. The sinus in the perinæum, where the cystotomy was performed, still remains slightly open, but he does not pass any urine through it.

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Remarks.—Although well aware that this operation is not by any means a novelty, but only a revival of the method adopted in supra-pubic lithotomy, yet the rarity with which it is called for, together with the very considerable success which has attended its use in this case, after everything else had failed, made me think that some notice of it would be not without interest to the Society. Two features about it call for remark:—(1) The previous cystotomy, which enabled us to wash out and inject the bladder with an antiseptic solution of thymol just previous to the performance of the operation, and thus convert this part of it into a perfect antiseptic proceeding. (2) The method of passing the sutures previous to the opening of the bladder, by which the walls of the viscus were held up and prevented from receding from the wound, as they are apt to do when the urine escapes, and by which, when the operation was completed, the wound in the bladder was rapidly and easily closed. So satisfactory was this result that, in any subsequent case of the kind, I should certainly close even the skin wound with metallic sutures, and not leave it to granulate up, as I did in this case.

Comparing this operation with others for impermeable stricture, I should say that, as a general rule, it will not bear comparison for ease and rapidity of performance and certainty and success in results with 'Cock's operation,' and that it ought only to be practised where the latter operation has been tried and failed. If 'Cock's operation' be properly performed, failure to find the urethra can only take place from its not being in its right place. This may occur from the cause existing in my patient, from the pressure of tumours, or where very extensive unilateral suppuration has taken place, causing the normal relations between the parts to become disturbed. In such cases as these, the supra-pubic operation may become a legitimate and established one.

Whether it can always be made an antiseptic operation is another question. In a large number of stricture cases the urine is offensive and decomposing in the bladder. But, even in such cases, if the bladder could be got at and washed out with some antiseptic fluid prior to opening it, there would be very much less chance of septic poisoning in the wound. In the present case this was done by means of the cystotomy, but it is obvious that it would be undesirable to repeat this in any fresh case of the kind. I would suggest,

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however, the possibility of introducing an aspirating trocar and canula into the bladder after the supra-pubic skin incisions have been made, and before the bladder is opened. By going well down behind the pubes, I think it would be easy to reach the bladder, even in cases where it was very much contracted. In this way fluid might be sucked out of the cavity and replaced by antiseptic lotion, so that when the bladder was opened, the escape of the contained fluid would have no material influence on the antisepticity of the wound. Another great advantage of this procedure would be that, by its means, the bladder might be distended just before opening, so that the last steps of the operation—the introduction of the sutures, and the puncture itself—would be facilitated, while the risk of damaging the peritoneum would be materially lessened from its being pushed up and away from the incision.

V.—*Litholapaxy; or, Lithotrity with Immediate Evacuation.* By Henry J. Bigelow. *Read October* 25, 1878.

THE communication I have the honour to make relates to a modification of the operation of lithotrity. It is a proposition to supersede frequent sittings, as nearly as may be, by a single sitting of sufficient length to enable the surgeon to crush the calculus completely and remove all the fragments.

In the opposite practice, which has hitherto prevailed, the calculus, unless it were very small, was broken a little at a time, at intervals of a few days, and the pieces were left in the bladder. For this course there was a plausible reason. The inflammation that sometimes followed the operation was naturally attributed to the instrument used in crushing the stone; and the shorter the operation, the less, it was supposed, would the irritation probably be. Under this impression, skilful operators, ever since Civiale, have reduced the length of the sitting to a few minutes—hesitating to continue manipulation even with instruments of polished metal. They had no hesitation, however, in leaving the mucous membrane exposed for weeks to sharp, ragged edges of broken stone—the fragments in the bladder re-

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maining where they were, because there was no instrument for removing them.

The removal of mere sand and minute fragments by suction through the urethra is old, and dates from Crampton, who records two drachms of sand drawn out at once—than which, I believe, no larger quantity has been so removed since at one sitting. This sort of detritus also escapes of itself, by the urethra, without inconvenience. But fragments large or abundant enough to be important factors in producing irritation have never till now been got rid of. One insuperable obstacle has always been the small size of the evacuating catheter. The aspirator of Clover, for example, is inefficient, partly because the catheter, having the small calibre of 21 French, allows the passage only of sand and a few minute fragments.

So long as the two sources of injury, the crushing and the fragments left by it, were thus inseparable, their effects could not be distinguished, and there was a strong feeling against any protracted manipulation of the stone. To withdraw the offending fragments was the only possible way to discover what was the effect of the crushing itself, and how far it might be prolonged.

It has happened that I have always etherised patients for lithotrity; and, as there was no pain in the operation, I not infrequently protracted the sittings to ten or fifteen minutes. The need I felt was not of more crushing—for I was already doing as much of this as seemed advantageous—but rather of some way to get rid of what was already crushed. The singular insensibility sometimes shown by the bladder not merely to the presence of calculi, to which it had become accustomed, but also to lithotrity, and by the urethra to divulsion, was too striking to be overlooked, and made it probable that the mucous membrane would tolerate a good deal of interference, if decisively terminated; if irritation were not kept up by the unwonted presence of sharp fragments left in the bladder. When Otis announced the great capacity of the urethra, now familiar through Van Buren's steel sounds, it became obvious that large fragments of stone might be removed. I therefore had some tubes of corresponding size made, and soon after adopted the evacuating catheters and the aspirator I now use, by which the bladder can be rapidly emptied of any common amount of *débris*. I experimented with caution, in view of the overwhelming weight of traditional and current tes-

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timony. A gentleman—then lately from abroad, who had had unusual opportunities for observation of lithotrity—told me, after seeing one of my earlier operations, that the mechanical procedure might be good, but that the patient would die. Yet he recovered. This and other similar cases, then first treated by the aid of large evacuating catheters and an efficient aspirator, showed a tolerance, on the part of the bladder, to the use of instruments, which had till then been unsuspected.

Fig. 1.—Author's lithotrite — *a*, spherical handle substituted for a wheel; *b*, cylinder which operates upon the lock *c*.

These considerations involve this new principle in lithotrity: that it is better to remove all the fragments immediately, because the bladder will tolerate a good deal of mechanical disturbance with the lithotrite and aspirator, if only that be all, with the obvious rule that we may substitute, for the traditional few minutes of a sitting, time enough to remove the whole stone.

Experience has confirmed both the principle and the rule; and although it is impossible now to prescribe the limits of the operation, I have frequently continued it for an hour with successful results, and have known eighteen hundred grains to be removed in three sittings, of about one hour each, under ether, the result being almost immediate relief.

The long sittings of the new method suggest other precautions besides those usual in common lithotrity. Instead of withdrawing the lithotrite frequently, to clean it, I have devised blades that cannot become impacted with detritus. The old fenestrated instruments do not clog, and in that respect work well, especially as the coarse gravel that passes the fenestra of the female blade will also pass through the large catheters. Dr. Van Buren and Dr. Keyes have used the fenestrated lithotrite successfully in the new operation. But this allows sharp

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fragments to be pressed through the instrument against the floor of the bladder, and I doubt if this is harmless. The sides also of a fenestrated blade are weakened, if made low enough to receive fragments readily. Therefore, while this mode of construction may be serviceable for small stones or fragments, I usually prefer a solid female blade to protect the floor of the bladder, relying on a self-cleaning male blade

Fig. 2.—Aspirating-Siphon in a stand which has a ball and socket joint to allow the bottle to stand in an easy position. The glass trap is surmounted by an oval bottle and curved tube of rubber, terminated by a stop-cock. When the latter is coupled with the stop-cock upon the evacuating catheter, the two are kept open by a hinged clip, seen in the drawing.

to prevent impaction. I like also a large lithotrite to crush common stones as well as large ones. But if the operator prefers, he can use different lithotrites for different stones.

In a long operation, when the attention gets wearied, the lithotrite is liable to catch the wall of the bladder.

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When the operation exceeds a few minutes, the average surgeon cannot be relied on always to turn up the instrument in the centre of the bladder before crushing; and the forceps-like blades of the best common lithotrites are well arranged to do injury. I find great advantage, and no disadvantage, in a long and blunted, as well as wide, female blade. This keeps the walls of the bladder back while the male blade is securing the fragments, either when they fall into a depression made in the floor by the female blade, or when the lithotrite, previously opened, is turned to one side and closed along the floor.

In crushing, the easiest movement, and the one that recurs most frequently, is the rotation of the right wrist in screwing down the male blade. The lock of my lithotrite is shut and opened by this same movement, and can be

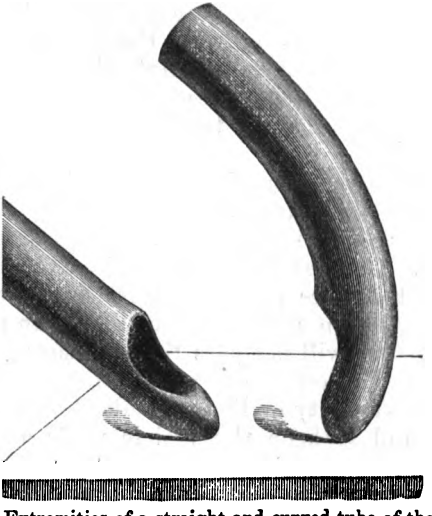

Fig. 3.—Extremities of a straight and curved tube of the size 31.

applied to any lithotrite. The same movement that locks it begins the crushing, and the reverse movement unlocks it—the requisite force being applied by a ball, in preference to the wheel commonly used.*

* After careful experiment as to the easiest movement of the hand and arm in crushing, which is undoubtedly the rotation here spoken of, I adapted the lock to it. It requires no displacement of the fingers. If any easier movement be discovered, there will be an advantage in adapting a lock to that. I have heard, in apology for the traditional wheel as a handle, that the awkward hold it gives

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The aspirating-siphon is an elastic tube, having at one end an evacuating catheter, at the other an elastic oval-shaped bottle, terminated below by a glass receptacle and supported on a stand. The bottle itself is strong, and when compressed dilates with force. Fragments enter at the top and fall to the bottom into the glass receiver, where they remain. They cannot return from the bottle to the bladder, as happens if the mouth of the evacuating catheter opens in or near the trap. But if they could, no harm would ensue; evacuation with large catheters being so rapid that a fragment or two returned to the bladder is very soon brought back again. When the fragments once enter the catheter, they pass so quickly to the bottle as to make it possible, without retarding them, to interpose between the catheter and the bottle several inches of elastic tube, to relieve the bladder from the vibration of the aspirator, and to make the catheter independent of any motion of the other part of the apparatus. If the surgeon guides the catheter with his left hand supported on the patient's thigh, the elastic tube allows a delicacy of manipulation which is hardly possible when the bottle is rigidly attached to the catheter, especially if it surmounts it.

The calibre of an evacuating catheter determines the size of the fragments that pass it. Beginning with 27 French, I gradually increased the size to 31, employing, as a rule, a calibre of 30. Smaller tubes transmit smaller and fewer fragments; I therefore prefer at least 30, when it can be used. If the surgeon prefers 28 or 29, he can further crush the fragments that will not pass through these. The catheter should have its lower orifice of full calibre, with a prolonged blunt extremity or lip to facilitate its passage into the bladder, and to keep the vesicle walls away from the opening.

I use a straight tube. It is introduced more readily than a curved one, and shows better how it lies in the bladder. The fragments, under aspiration, are so constantly moving, that a curved instrument is not needed to find them, as in sounding; on the contrary, they find the catheter. If, however, a bent tube be preferred, the curve should be short, the hole close to the end, and of full dimensions.

To introduce a large tube, the urethra is copiously oiled

the hand prevents the application of sufficient force to break the blades; but the blades can be made strong enough to resist the better grasp allowed by a ball without being too large to pass easily through the urethra.

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with a syringe, and its calibre ascertained with a steel sound. The meatus, the narrowest part, may be snipped with scissors, if necessary, or a stricture be enlarged by divulsion; but a calibre of 30 will usually enter the normal passage. Whether straight or curved, the evacuating catheter is passed perpendicularly as far as the rectum. The straight catheter is then laid horizontally—a movement that tilts up the end to the hole in the triangular ligament. This entered, the instrument is, by a screw-like motion in the axis of the body, passed through the prostate, the eccentric extremity readily finding its way. In one form of enlarged prostate the hole in the ligament may require a further elevation of the point of the catheter to discover it. But the common difficulty of passing an instrument of any sort results from a premature depression of the handle, which raises the other end above the hole. This observation is not new, but requires to be emphasized in connection with large-sized instruments. It is also useful to press the bent part of a curved instrument in the direction of the axis of the body, with the left hand on the perinæum. It need not be said that all the movements are gentle and deliberate. Rapid lithotrity should be done slowly.

The stone is crushed as usual, except that a non-impacting lithotrite may be kept in the bladder to advantage until the fragments are buried in the detritus. When the latter is removed, the crushing is repeated. Detritus is withdrawn better by a catheter than by an impacted lithotrite, and a few alternate operations of crushing and aspiration suffice to evacuate a stone of considerable size.

As preliminary to aspiration, the evacuating catheter is introduced and the bladder emptied, leakage being prevented by a band tied round the penis. The bottle is filled by letting it dilate while the elastic tube is immersed in water, and, the stop-cock being then closed, it is placed in its stand. To expel the air from the evacuating catheter, this may be also filled, by means of a syringe, and its stop-cock also closed. It remains to couple the full bottle with the catheter in the empty bladder. The apparatus is now ready.

An aspiration that withdraws two or three ounces of water about twice in three seconds brings a continuous shower of detritus into the glass cylinder. If the bottle expands reluctantly, a fragment is lodged in the catheter, and a sharp compression of the bottle will probably eject it; but if not, it may be pushed back with a rod. Several succes-

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sive jerks, like the bite of a fish, signify a valve-like stoppage of the opening in the catheter by the elastic walls of the bladder. The latter is then too flaccid, and needs a few ounces more of water from the bottle to distend it, after which the stop-cocks are shut and the bottle is replenished. This common sign is generally a valuable one, because it indicates a good-sized bladder. But it sometimes happens when the opening of the catheter is turned sideways.

The operator sits on the patient's right. Evacuation is very rapid when the catheter is held properly, and the best place for the end of the instrument is ascertained by trying. It is a little curious that a continued shower of detritus is sometimes brought into the trap by changing the direction or elevation of the catheter only a quarter of an inch. Any good position should be maintained accurately. A good place for aspiration is just off the floor of the bladder; higher when the first fragments are crowding into the tube, and need to be received in single file; and later, lower down in a depression of the floor, when the *débris* require to be assembled. The last fragment, if small enough, is sure to enter the catheter after a while. By a few minutes' aspiration in a tumbler covered with a napkin, I can always isolate, from a mass of broken coal, the only bits too large to enter the catheter. As the sand is cleared away, fragments announce their presence by clicking against the tube; a long, full-sized one may be arrested half-a-dozen times before its final withdrawal and appearance in the trap. When the clicking has ceased for a minute or two, the bladder is practically clear, and there remains only a final exploration with a tube or lithotrite at a convenient time.

A little air, mostly from the evacuating catheter, may get into the bladder during the operation, but does no harm, if it does not over-distend a small bladder. The air is readily discharged with the urine, but it is well from time to time to open the evacuating catheter and expel it by compressing the bladder above the pubes.

The pulse and temperature, usually higher the day after the operation, soon subside; the general treatment of symptoms being much the same as after lithotrity.

By this method, which I have called litholapaxy, its peculiar feature being evacuation, tenacious mucus with phosphatic deposit, as well as nuclei and certain foreign bodies, can be better removed than in any other way.

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VI.—*On a Rash following the Administration of Quinine.*

By Robert Farquharson, M.D. *Read November* 8, 1878.

THE drawing which I hand round gives a fairly good representation of a case of quinine rash which occurred during the autumn of 1877, at St. Mary's Hospital, in the practice of Dr. Cheadle, who has kindly allowed me to bring the following brief notes before the Society.

Thomas Newton, æt. 14, was admitted August 7, with febrile symptoms, consisting of general malaise, rapid pulse, and a temperature of 101°. Some suspicion of typhoid was at first entertained, but the further progress of the case did not in any way favour this view, no rose spots or abdominal tenderness being observed, and the action of the bowels becoming quite regular. The temperature, however, continuing at over 100°, it was determined to try the effect of considerable doses of quinine, and 10 grains were accordingly ordered to be taken three times a day. The medicine seemed to be well borne until after 12 doses had been taken, when the temperature, which had never gone down in any material degree since admission, suddenly rose to 102°, and the boy complained of much tingling and irritation about the skin. On inspection a sort of rubeolous rash was observed pretty equally scattered over the body and extremities, composed of flat slightly raised patches of a bright pink hue. Some trifling degree of deafness seemed to be present, but this was the only manifestation of the more ordinary symptoms of cinchonism, and on withdrawal of the drug the eruption rapidly disappeared, the skin resuming its natural appearance without the occurrence of the slightest desquamation.

On referring to the literature of the subject, I find that although what has been called the 'quinine rash' has only been recently described, a good many cases have been recorded both at home and abroad, and that these fall naturally into two classes:—

1st. An eczematous eruption observed to occur on the arms, legs, and genital organs of persons employed in quinine manufactories. Its appearance is usually sudden, and consists in numerous vesicles becoming confluent here and there, and even uniting so as to form large bullæ resembling pemphigus. Pustules may eventually become

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developed, and large patches of vivid redness alternate with thick crusts; but although relapses are not uncommon, soothing treatment is usually rapidly successful. All we know of this form of rash is due to the researches of MM. Bergeren and Provest, in their valuable paper, 'Des Eruptions Quiniques,' published in the 'Annales d'Hygiène Publique' for 1876, and it is interesting to note that these excellent observers consider the rash due to idiosyncrasy, and not to the bark, or quinine, or cinchonine, as a locally irritant cause.

2nd. An eruption which follows the administration usually of very small doses of the drug, a single grain having been sufficient in one or two recorded cases to produce an erythematous rash, attended with most distressing tingling and irritation, and resembling scarlet fever both in the character of the red blush and in the free desquamation which is the almost invariable sequela. Less frequently itching papules have been observed; and in one case, in Dr. Thorowgood's practice, as well as in my own, the rash was distinctly measly in character, and strongly suggestive of urticaria. This suggestion may seem perhaps to give the clue to the real cause of Thomas Newton's sufferings, and that his cutaneous irritation was nothing more or less than nettle rash, following, as it so often does, some error of diet, and not connected in any way with quinine. It so happened, however, that Mr. Luscombe, now of North Callingham, but at that time a student of the hospital, chanced to be in the ward, and as he was well known to have himself suffered from two severe attacks of a similar nature, his opinion was appealed to with interest, and he had no doubt that the symptoms of this lad were in many respects similar to his own. Absolutely alike in so far as the eruption was concerned, the main point of difference was in the troublesome gastric disturbance noted in the following brief statement with which he has kindly furnished me:—'I first had the quinine rash in 1874, after taking three grains thrice a day. The local appearances did not present themselves until I had continued the medicine for a week, and I then believed that I was suffering from urticaria, as I was living at the seaside. I had no vomiting, but suffered a good deal from pain in the epigastrium.

'In 1876 I had my last and worst attack, after taking nine or ten 5-grain doses of quinine in the course of four days. The rash then rather suddenly appeared all over my

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face, limbs, and body, with much heat and itching, a temperature of 100°, pulse from 110 to 125, and very distressing vomiting and epigastric pain. The eruption remained out for more than a week after the discontinuance of the drug, but the vomiting persisted for nearly a fortnight, whilst the pain after food, and more especially after vegetables, remained for at least six weeks, and only finally yielded to change of air at the seaside.'

Mr. Luscombe's case is of much interest as corroborating the observations made at St. Mary's Hospital, and as having occurred in the person of a well-trained and skilful observer. It shows that sometimes, if not always, the quinine rash may essentially be an urticaria produced by gastric irritation, for although Thomas Newton did not complain of any prominent dyspeptic symptoms, it is quite possible that these may have been merged in the greater discomfort of his hot and tingling skin. Retarded or deficient elimination may have some influence in causing these exceptional manifestations of the physiological action of quinine, but in the present state of our knowledge we can do little more than say that some idiosyncrasy or personal peculiarity, which we can neither foresee nor prevent, awaits the explanation which science will doubtless one day give.

A point of some interest in connection with the antipyretic action of quinine was the absolute failure of the drug to prevent the rise of temperature which accompanied the febrile attack, for not only was it powerless to do so, but the thermometer registered two degrees higher when the cutaneous irritation appeared. There seems little doubt, however, that the dose given was too small to exert any appreciable lowering influence over the body heat.

VII.—*Ogston's Operation for Genu Valgum—Death.* By Arthur E. Barker. *Read November* 8, 1878.

WHEN a new operation involving considerable risk to limb and life is proposed and practised, it appears to me to be the duty of all surgeons who try it to record as faithfully as possible their results, whether favourable or *unfavourable*, in order that all those after them inclined to adopt the new method may have as many data as possible before them from which to draw their conclusions as to its

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propriety, &c. It is for this reason, as much as for its intrinsic interest, that I now place upon record the subjoined case, which, to my great regret, has resulted most unfavourably.

John Kirk, æt. 6 years, was brought to me early in last September, by a former patient, on whom I had operated, and who was grateful for benefit received, with a request that I should attempt some operation for the cure of very marked genu valgum. Having explained to her the danger of an operation on the joint, and finding that she readily accepted the risk for her young friend, I promised to do what I could for him by operative procedure.

The child had been rickety, but was apparently healthy at this time. I was told he came of a delicate family, prone to lung affections; he himself, however, appeared free from anything of the kind. He had genu valgum on both sides, but only on the right was it extreme, so that I decided to operate on that side alone. The internal condyle was four-fifths of an inch longer than the external. The internal malleolus was deflected 3½ inches from the normal axis of the lower limb.

On September 18 the operation was performed in the following way, the strictest antiseptic precautions being observed:—

Having made out all the bony points as carefully as possible by manipulation, I made a puncture with a tenotome, about two inches above the inner condyle, passing the blade down in front of the latter, towards the inner aspect of the crucial ligaments. Passing an Adams' saw along this wound, I then flexed the knee, and commenced to saw off the internal condyle. This was accomplished after careful and slow cutting, during which every care was taken to avoid wounding the soft parts behind the joint. After the portion of bone was freely moveable, the limb could be brought into a straight line, but some force was necessary to do so. It could not be brought beyond the straight line of a normal limb by any force I thought it judicious to employ. A good deal of blood oozed from the cut bone, and escaped by the puncture in the skin, but apart from this there is nothing further to note about the operation. The limb was dressed with a piece of protective over the wound, and gauze over this, in the usual way, except that there was no 'hat lining' beneath the outer layer. I then put it up at once in the straight position in plaster of Paris.

The next morning I saw the patient, and found him very

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comfortable, with no pain and very merry. The temperature taken not long before my visit was 99·8°. The toes were a little cold, but the circulation was but little interfered with, and sensation and motion in them were perfect. I left strict directions that if the limb should become uncomfortable, or the toes at all numbed, and, above all, if the temperature should rise at all, I should be sent for at once. At 9.30 the same evening I received a message stating that the temperature stood at 105·4°, and that the patient was not well, the toes cold and livid, and sensation in them gone. On visiting him at once, I found all this true, and that the thigh above the plaster case was tense and tender, especially about the inguinal glands. The temperature had risen as far as 102·2° in the forenoon, and the toes had begun to grow numbed (but I was not told of this until 9.30 P.M.). The plaster splint was at once removed, and the limb found numbed and cold below the knee; but in a short time it recovered, and within an hour had almost regained its normal condition. The knee seemed quite quiet. The limb was then simply wrapped in cotton and flannel, and put on a long splint, with an ice-bag over the antiseptic dressings round the knee.

The next morning I found that the temperature had stood ever since above 105°. The boy was muttering and wandering; the thigh was not so tender, and the foot was normal. Resp. 48; pulse about 200; tongue and lips dry and parched; had been vomiting everything.

Removed all dressings under carbolic spray; found the joint soft, and of normal temperature; no trace of inflammation or tension; squeezed about half an ounce of blood, with a trace of what looked like synovia, out of the joint by the puncture. The joint looked as well as could be desired. The boy starts occasionally, and twitches his hands about; does not complain of any pain except when the limb is moved. Ice was applied over the limb as before. His lungs were then examined, and well-marked consolidation of the right base was discovered. Hot poultices were applied over the back, and brandy was given by the rectum. The child rapidly grew worse, and died the same afternoon at 2.30 P.M., exactly 48 hours after the operation.

AUTOPSY EIGHTEEN HOURS AFTER DEATH.

Rigor mortis well marked. Purple staining over front of forearm, hands, back of forearm, front of thighs, and posterior part of trunk.

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Pericardium contains two or three drachms of serum.

Heart normal.

Lungs: Right, solid over the whole of lower lobe, except anteriorly along lower margin. Also solid to a certain extent in front aspect of upper lobe. Glands at root of lung enlarged and indurated. Lower margin of inferior lobe collapsed. Over centre of lower lobe pleura slightly roughened, and covered by a thin layer of lymph, and also puckered. Anterior border of upper lobe somewhat emphysematous.

Bronchi deeply congested; full of clear white mucus.

At point corresponding to puckering above mentioned, a deeply-coloured mass about the size of a large walnut exists in the lung tissue, apparently consisting of extravasated blood and pneumonic exudation. This proved subsequently under the microscope to be an hæmorrhagic infarct, with surrounding catarrhal pneumonia. It had in its centre a cavity about the size of a large pea. The latter contained a little soft, greyish material, surrounded by small white patches like decolourized fibrin. A similar condition of things was found near the base.

Left lung: Bronchi slightly inflamed; considerably blocked by thick tenacious mucus. Almost the whole of posterior lobe collapsed.

On examining the affected limb, the saphena and femoral veins were found quite normal. Some blood extravasated at the operation reached along the front of the quadriceps extensor femoris nearly to its origin. Pus was found in considerable quantity spread through the upper third of the sheath of the quadriceps. This purulent deposit, and the others found elsewhere, were mottled with small spots of extravasation. Another similar collection of pus was found in the rectus, but not in any way connected with the joint, ceasing a little above it. A small quantity was also found in the neighbourhood of the trochanter major.

There was no sign of inflammation about the knee-joint, no vessels ramifying about the synovial membrane, and hardly any trace of fluid within the latter. The surfaces of the joint were stained by the colouring matter of the blood. All the folds of synovial tissue around were normal. The crucial ligaments had not been touched by the saw-cut, except at the anterior insertion of the internal, which was slightly chafed. The ligamentum mucosum was intact, as also the external and internal lateral ligaments. The neigh-

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bourhood of the subcutaneous wound was quiet, with slight trace of suppuration, and tinged with infiltrated blood.

An examination of the bones showed that the saw-cut had been fairly planted and had done its work. It also showed why the tibia could not be brought farther inward than the straight axis of the limb, even by employment of considerable force. The explanation was this: when the tibia was brought inwards to a straight line with the leg, it pushed up the divided internal condyle. But, at the same time, its own upper surface, and especially the spine, then came into contact with the under surface of the femur, and inasmuch as the external lateral ligament is unyielding, it could go no further, the latter being put on the stretch and holding the external border fast. I have placed the bones of both limbs upon the table for comparison, but would draw attention to the fact that the left knee is also crooked.

As to the cause of death, I think there can be little doubt that it was septic pneumonia, accompanied—perhaps preceded—by pulmonary hæmorrhage. Why the septicæmia should have set in so very rapidly is still a mystery to me. I have never myself observed such scrupulous care in the use of antiseptics as in this operation, and have never seen more care observed by others. The instruments were left to steep in strong carbolic solution the whole preceding night, and were over and over again dipped during the operation. The limb was carefully soaked in the same solution for a couple of hours before the operation, and the steam spray seemed to work admirably. That the extra strain upon the arterial circulation, caused by the slow passage of blood through the limb for the few hours that the plaster bandage proved rather too tight for it, favoured pulmonary hæmorrhage in an otherwise weak lung, is possible, but can have had but slight influence on the case.

In conclusion, it appears to me clear that the operation, though admirably adapted to remedy the deformity, is dangerous, even in spite of every antiseptic precaution that can be taken. I am not aware that any other fatal cases have occurred, and have therefore felt it my duty to report this one where so little is as yet known about the advantages and disadvantages of the operation.

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VIII.—*On Osteotomy, with Special Reference to its Value in Genu Valgum and Extrorsum.* By Henry A. Reeves. *Read November* 8, 1878.

I WISH briefly to bring under the notice of this Society —with a view to its discussion—the subject of osteotomy generally, but more especially do I desire to draw attention to a plan which I have practised for the last seven months, and which has had most satisfactory results.

I have now operated on 21 cases of knock-knee and 2 of bow-knee by a method which I believe, in the large majority of cases, to be, and have consequently called, 'subcutaneous extra-articular osteotomy of the condyle.' It consists in first flexing the knee, so as to render the outline of the condyles prominent, and to pull down the supra-patellar pouch of synovial membrane. The thigh and leg being steadied by assistance, a scalpel is introduced obliquely just above the internal tuberosity, the soft parts divided, and a graduated chisel, on which the depth of the condyle and soft parts has previously been ascertained, is passed beside it. The condyle is then *loosened*, but not separated, and the chisel-cut should only extend to about $\frac{1}{8}$ of an inch from the articular surface of the cartilage. The limb is then forcibly straightened, a small pad of lint, dipped in carbolic oil, is applied, and a plaster of Paris bandage put on. On the tenth day the bandage is removed, and it will be found that the patients can partially flex the knee. Gentle passive motion is resorted to, and the same plaster splint reapplied, being fixed with an ordinary bandage. Passive motion is continued daily until complete flexion is reached, and the patient is allowed to walk with crutches in 14 days after the operation. In 5 or 6 weeks, usually, the cases may be discharged.

Nearly all these cases were operated on without antiseptic precautions, but latterly I have used the spray, not because I had any bad results without it, but in order that the patients should have any additional benefits which it may secure.

Of the 21 cases of knock-knee, 5 were single and 16 double. Of the single cases 3 were on the left side and 2 on the right. The subjects were all young, the oldest being 15, and the majority were boys.

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At first I only operated on one knee, in double cases, but latterly I have loosened both condyles at the same sitting, and the cases have all done well.

I had hoped to be able to show some of these cases to the members, but most of them are now in the country. There are several cases now in hospital, but they are incomplete. I may state that the cases which have been discharged were all walking well; in fact, much better than before the operation, and with lengthened limbs. Motion is perfect, and in only one case was there any complaint of pain before being discharged, and in that case it was very slight, and soon disappeared on using the limb.

Mr. Parker, my colleague at the East London Children's Hospital, has, I believe, a case present, and the result in this case exceeds my most sanguine anticipation. As will be seen by the photograph, which he will show, it was a bad case of double genu valgum. He operated by my method on one knee, and, seven days later, on the other, and within a month the child was walking about the ward. The gap between the malleoli was considerable, and the child is rickety, having its femora curved and its tibiæ bent and rotated outwards. It can now make its malleoli touch, and motion is perfect.

I have discharged several cases in from 5 to 6 weeks, but Mr. Parker has shown us that if the operation be carefully performed, and passive motion commenced in 7 or 8 days, the majority of the cases may safely be discharged in a month or 5 weeks at the outside. By operating simultaneously on both knees the duration of the treatment will be much shortened.

To avoid being lengthy, I will select for illustration 4 severe cases, 2 of valgum and 2 of varum; and, although I much regret that these cases are now beyond my reach, so that I cannot show them to the Society, I must add that they have been seen by many surgeons who can testify to the excellence of the results. The photographs and tracings from photographs before and after operation will show how the deformity has been corrected.

A girl, æt. 13, was admitted into the East London Children's Hospital suffering from extreme double rachitic genu valgum. Both internal condyles were obviously much overgrown, and the internal malleoli were 2 feet apart. This was one of my earlier cases, and I only operated on the right knee. I had not previously found the condyle so soft as in this case, so it occurred that a blow with the mallet

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of the usual strength caused the chisel to enter the joint. Some effusion into the knee took place, and lasted 3 or 4 weeks, but it then disappeared, and she now has a good joint. Being absent from the hospital, I did not operate on the other knee for some weeks. I kept clear of the joint this time, and there was no effusion, nor pain, nor rise of temperature. The operations were not antiseptic. This patient has now perfectly straight limbs, but is, unfortunately, under the care of the physician for tubercle of the lungs, and, it is feared, incipient tubercular meningitis. She can be seen at the hospital by anyone interested. Having been confined to bed for so long a time, she is necessarily weak on her legs; and had I known when I operated on her what I do now, I should have commenced passive motion very much earlier.

A girl, æt. 8, was admitted into Mary Ward of the London Hospital, the subject of extreme left genu valgum. I loosened her internal condyle, which was decidedly longer and larger than the outer, and straightened her leg, and applied at once a plaster of Paris bandage and an ice-bag. Ten days later the bandage was loosened, and passive motion begun, and in 3 weeks she could walk, but was of course weak on this leg. This and several other patients could semiflex the knee when the bandage was removed. She was discharged in 5 weeks, and is now in the country.

A girl, æt. 11, came under my care in Sophia Ward of the London Hospital, on account of severe double genu varum. Here knees were 7½ inches apart when standing with her malleoli touching, and her external condyles were very much overgrown. At the same sitting, I loosened one outer condyle after the other and *over-straightened* the limbs, that is, produced a slight *introrsum*, and then put them up straight. The subsequent treatment was similar to that adopted in the second case of valgum just given, and she was discharged between 5 and 6 weeks after the operation, walking excellently, and with perfect motion in the joints. In this and the preceding and following cases, there never was any effusion into the joint, or any rise of temperature, and complaint of pain only when passive motion was begun. She measured 1½ inch between the condyles, instead of 7½ inches, and if her femora and tibiæ had not been curved, I should have succeeded in making them touch when she was in the standing position.

The fourth case was a girl, æt. 9, who was admitted

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under me in Mary Ward of the London Hospital. She was almost the counterpart of the case just described, and as the treatment and result were alike in both, I need not detain the Society with further description.

I have purposely selected these four extreme cases as a text on which to base the following conclusions, which I shall be much obliged if the Society will thoroughly discuss. I will submit them in the light of my own experience, and they must necessarily take a dogmatic form.

Conclusions.

1. That in those cases of knock-knee and bow-knee in which the respective condyle is overgrown and osteotomy is called for, the plan of simply *loosening* and not *separating* the offending condyle is preferable to Ogston's operation or division of the shafts of femur, tibia and fibula: first, because of its safety; secondly, it is much more quickly done; thirdly, passive motion can be begun much earlier; fourthly, the condyle being simply loosened, there is no fear of non-union and necrosis; fifthly, there is no need to interfere with the largest joint of the body, and even if this be accidentally done, it being a much more subcutaneous injury than in Ogston's method, there is very much less likelihood of joint mischief, leading to anchylosis, excision, amputation or death; sixthly, less damage is done to the epiphysis; and seventhly, the cases are much more rapidly cured.

2. That Ogston's operation was good and justifiable until a simpler and safer method was employed. I beg respectfully to submit that both these essentials are supplied by 'subcutaneous extra-articular osteotomy of the condyle.'

A few words on osteotomy generally. I have had occasion to divide nearly 100 bones, and feel that I may speak with some confidence on the subject. My experience has been limited chiefly to the lower limb, and most of the cases were for curvature of the tibia and fibula. On five occasions I have divided the femur at its upper end for anchylosis of the hip. One of these cases had both hips anchylosed, and I divided the femoral neck with the chisel on one side, and the shaft just below the great trochanter on the other. The drawings show the condition prior and subsequent to operation. I have done a large number of osteotomies for external and anterior curvature of the tibia and fibula, and I always divide the bones from the front directly backwards. It has been said that one cannot correct an anterior cur-

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vature of the tibia unless one divides the bone from behind. My experience is quite the contrary, as I have been able to correct both the anterior and external curvature by operating from the front. I mention this because it simplifies the operation considerably.

More than two-thirds of my osteotomies were done without antiseptic precautions; only three of them suppurated, and in two of these either measles or scarlet fever was the cause. They all, ultimately, did well.

IX.—*A Case of Talipes Varus treated by the Removal of a Wedge of Bone from the Tarsus.* (Patient Shown.)

By Thomas Bryant. *Read November* 22, 1878. *Reported by* Mr. C. Wood, *Dresser, to whom much of the success of this case should be attributed.*

THOMAS N., æt. 12, a healthy-looking schoolboy, was admitted into Guy's Hospital, under Mr. Bryant's care, on June 12, 1878, with an extreme example of congenital talipes equino-varus of the right foot.

He had been under surgical treatment for it when an infant, and when five years of age had been operated upon with some success, the foot having been brought straight. He subsequently wore a Scarpa's shoe for some months, but as it pained him he left it off, and for the last seven years he has had nothing done to correct the deformity.

On admission, the foot was in the position represented by the cast and drawing. The muscles of the leg are rather wasted. The heel is drawn up, and the foot so turned in as to present the sole towards the median line of the body, the foot thus appearing as if a sub-astragaloid dislocation existed. The boy walks entirely upon the outer edge of the foot, and as a consequence two large protective bursæ have formed —one over the base of the fifth metatarsal bone, and a second over the articulation of the calcis and cuboid bones. The head of the astragalus forms a marked projection outwards, and the scaphoid bone is so displaced inwards as almost to touch the inner malleolus. At the point of approximation, a deep depression is to be felt, and a puckering of the integument is visible. The foot cannot by force be moved from its position, although in flexion the tendo-achillis can be put upon the stretch.

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Mr. Bryant having decided that the case was not one which could be effectually treated by either tenotomy or mechanical appliances, determined to take away a wedge of bone from the tarsus, as first performed by Mr. Davies-Colley in October 1875.

Operation, June 18.—The patient having been placed under chloroform, and the limb raised to empty it of venous blood, Esmarch's elastic bandage was applied round the calf of the leg. An incision was then made across the dorsum of the foot from a point corresponding to the tubercle of the scaphoid to the outer border of the cuboid, and a second along the outer border of the foot, crossing its extremity (*vide* fig. 1). The flaps were then turned back, and

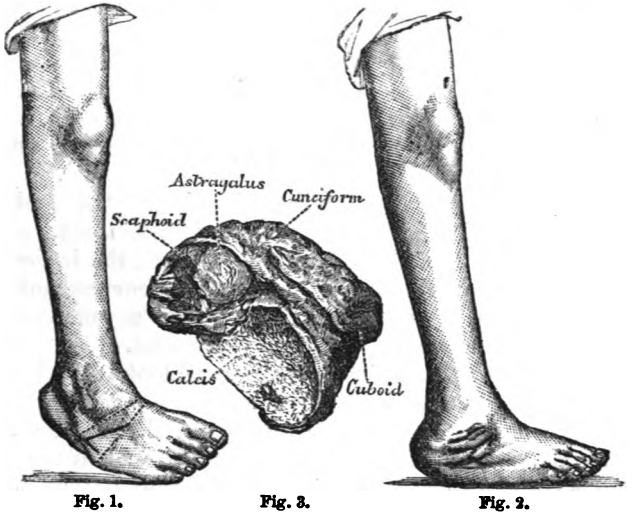

Fig. 1. Fig. 3. Fig. 2.

the tendons of the extensor brevis and longus digitorum muscles divided. A spatula was next introduced round the scaphoid bone towards the sole of the foot beneath the soft parts for purposes of protection, and the lower section of the wedge of bone was readily made with a key-hole saw, the line of section extending across the dorsum of the foot from the scaphoid to the anterior border of the cuboid bone. The second bone section was then made higher up, and a wedge with its apex corresponding to the scaphoid bone, and its base, 1 inch long, to the cuboid, was taken away, a few touches of the scalpel readily separating the wedge from its attachments to the muscles of the sole of the foot.

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The sections of the bones were very clean, as shown by the preparation and drawing (fig. 3), and the injury to the soft parts was very slight.

After the operation the anterior half of the foot was readily brought into position, the vessels were twisted, and the surface of the wound washed with iodine water, as is Mr. Bryant's custom; four sutures were then introduced with a strand of horsehair for drainage, and an inside splint was applied, some pressure being employed for a few hours after the operation by means of a large sponge bandaged over the foot. A subcutaneous injection of $\frac{1}{6}$ of a grain of morphia was given at bed-time.

19.—Slept well after the injection. T. 102°. P. 96.

20.—There has been no bleeding since the operation, and no sickness. T. 102°. P. 102.

21.—The wound was dressed for the first time, and some of it has healed. There is very little discharge. The side-splint to be changed for a posterior leg-splint with a foot-piece, and the wound to be dressed with terebene and oil. T. 99·7°. P. 80.

24.—Doing well. Complains of pain in the foot only when it is dressed. All the sutures were taken out.

26.—There is some little redness beneath the inner malleolus, over the scaphoid bone, at a point corresponding to the apex of the bone incision. Into this a puncture was made on July 1, and some pus was evacuated.

July 3.—T. 98·6°. P. 100. The wound looks very healthy, and the boy is generally comfortable.

5.—The horsehair drainage was removed. T. 98·6°.

11.—Mr. Davies-Colley's talipes splint was applied, and the leg swung, in order that the heel might not be pressed upon. The bones in the line of section seem to be uniting well.

18.—Temperature and pulse remain normal. The boy's general condition is good, and the wound has nearly healed.

30.—The wound has almost wholly united, a few flabby granulations alone existing about the centre of the horizontal incision, where the skin is puckered.

Sept. 10.—The position of the foot is excellent (fig. 2), the sole being quite flat. The foot and leg are to be fixed in a Bavarian flannel splint, and the boy is to return home.

Oct. 20.—He returned to the hospital to-day in good health and with a good foot, the wound having healed. He came to have the tendo-achillis divided, with the view of

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improving the movement of the ankle-joint. This operation, however, was not followed with much success.

At present, November 10, his foot is flat to the ground and fairly strong. He can walk with comparative ease.

Remarks.—The success of this case is very gratifying and complete, and I trust will tend to show that the removal of a wedge of bone from the tarsus is a sound and trustworthy operation for such extreme examples of talipes equino-varus as are illustrated by the case, where tenotomy and mechanical appliances have been tried and have failed, or when the hope of securing a good result by their means is feeble and remote.

This operation, which was first performed by Mr. Davies-Colley, in October 1875, and repeated by Mr. Richard Davy in November 1876, I believe to be far superior to the ablation of the cuboid, as originally suggested by Dr. Little in 1854, and first practised by Mr. S. Solly in 1857, and I say this after having had an opportunity of seeing several of Mr. Richard Davy's cases of the latter operation performed in 1874–5–6. And I believe it to be better than Mr. Lund's operation of 1872, which consists in the removal of the astragalus; although possibly where the equinus is worse than the varus such a measure may be employed.

I regard this operation as a valuable addition to the means at the disposal of the surgeon for the treatment of extreme examples of talipes equino-varus, and I trust by the publication of this case the attention of surgeons will be more directed to it.

X.—*Two Cases of Iodide of Potassium Rash.* By Dyce Duckworth, M.D. *Exhibited November* 22, 1878.

J. T. M., æt. 32, a warehouseman, of slight build, fair haired, came under my care at St. Bartholomew's Hospital, in January 1878, suffering from severe bronchial catarrh.

His history indicated that he had had good health till he was 28 years of age. He then had rheumatic fever. For some years he had been a hard drinker. A year ago he suffered for some months with hæmorrhoids. On examination disease of the aortic valves was detected, and some albumen was found in the urine, which was of sp. gr. 1014. Under

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treatment he improved, and the amount of albumen varied from time to time. In March he was admitted with a second attack of rheumatic fever into the Infirmary of the City of London Union, and remained there for five months.

On November 8 he came again under my care, suffering from bronchitis and general dropsy. He was very pale and weak, and looked extremely ill. The urine was very albuminous. The cardiac apex was in the left nipple line, and there was a double aortic murmur present.

Small doses of tartarated iron, with two grains of iodide of potassium, were ordered thrice a day, and this treatment was employed regularly from Nov. 8 till the 20th of the month, on which day a rash appeared for the first time on the face and the back of the neck. He stated that he had had a similar eruption while taking some medicine in the Union Infirmary, and that it passed away on ceasing to use it. The urine was albuminous, and gave evidence of the presence of blood. Iodine was also found in it with the starch test. An abundant eruption was seen on the face, somewhat symmetrical, but in greater amount on the left cheek and ear. It was raised and ugly-looking, vesicular, with hard red base, confluent in places, and of varioloid aspect. Some papules were seen, hard and 'shotty' to the touch. On puncture, a little opalescent fluid exuded, which yielded equivocal evidence of the presence of iodine. An apparent iodide or chloride of silver was obtained, which was soluble in ammonia.

The iodide of potassium draught was stopped.

Notwithstanding, the rash continued to come out on other parts, notably upon the forearms and backs of the hands, and it was observed that some of the eruption had occurred on the scar-tissue of an old wound on the forehead.

In this condition he was shown at the meeting of the Clinical Society, and a few days afterwards I sent him to Dr. Tilbury Fox, who examined him with interest, and declared that the rash was at any rate 'follicular' upon the backs of the hands. The bronchial catarrh seemed to be increased, and there were also coryza and much hoarseness of the voice. The eruption began to dry up slowly, and scabs of dirty yellowish hue formed upon it. The dropsy increased, and the general weakness. Death occurred somewhat suddenly, within three weeks from this time, probably from cardiac failure. Within thirty-six hours I removed two of the papules from the back of one of the hands, and these were

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subsequently carefully treated and examined microscopically by Dr. Vincent Harris. Full particulars of this examination were laid before the Pathological Society, and will be published in the 'Transactions' of that Society for this year.

A second case in which a rash occurred within a few months of that just related, was under the care of my colleague Dr. Gee, who kindly allows me to subjoin the particulars. As will be observed, there are several points in this case closely resembling those above described.

J. W., æt. 29, a carpenter, admitted April 30, 1879. Is a dark-complexioned, poorly-nourished man. Belly and legs dropsical. Has suffered from palpitation of the heart for many years. No history of rheumatism was obtained, but one brother suffered from severe acute rheumatism.

Has bled from the gums, and had epistaxis lately. The heart presented signs of both mitral and aortic valvular disease, and was hypertrophied. The liver was enlarged. The urine was of sp. gr. 1012, acid, and contained $\frac{1}{16}$ of albumen. The lungs were congested and œdematous at the bases. The lower limbs, from the groins downwards, were purpuric. On May 2 pericarditis was detected, and iodide of potassium in doses of gr. ix. per diem was ordered. Little change occurred for some days. Epistaxis occasionally. Temperature 99° to 100°. Albumen diminished slightly in urine. Dropsy increasing gradually. On the 8th instant eight pints of fluid removed from the abdomen. On the 9th it was noticed that a herpetic eruption had appeared on the face beneath each eye, at the root of the nose, and on the malar regions. On the 12th bedsores appeared. The eruption was spreading on the cheeks and forehead, and the left conjunctiva was implicated. More epistaxis. On the 13th the iodide was withheld. On the 15th an extension of the eruption was observed on the forearms, especially the left, and on the neck. That on the face had also spread, but showed a tendency to dry up. The areolæ of the vesicles were purpuric. Stigmata of purpura were found on the forearms. Although the eruption appeared to be vesicular, puncture of the vesicles permitted the escape of no fluid, save slight bloody oozing. The eruption was raised and firm, and the groups coalesced in places. Some scattered patches of it occurred on the backs of the hands. Death occurred on the 18th. No post-mortem examination was made.

Remarks.—The general resemblance of the actual eruption

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in these two cases was very marked. I have witnessed several instances in which the outbreak has been even more severe. In one case the exudation was so free that crusts formed which were not unlike those of true rupia, and thus the patient was supposed to be suffering from a syphilitic and not from an iodide eruption.

In these cases it is to be noted that the eruption ensued within a few days of taking the medicine. In both instances small doses were employed, six and nine grains per diem respectively. In both patients there was much dropsy, and the urine was likewise albuminous in each case.

In these respects the history is like that of other cases in which the same phenomena appeared, for it has been observed that the eruption is specially apt to follow the use of small doses of the drug in patients that are suffering from nephritis, and who are much reduced in health.

There would seem to be in such instances less good eliminating power, and thus the drug is longer maintained in contact with the tissues of the body; and there is manifestly some special susceptibility to the influence of soluble iodides in such patients. That influence is at present but little understood. The proneness to coryza and iodism is recognised in many patients as the result of the smaller doses of the drug, and is often readily obviated, curiously enough, by the simple expedient of giving larger doses which are better borne. It is not obvious why the face, neck, forearms, and hands should especially be the seat of outbreak, but such is commonly the case.

The fact that purpuric extravasations occur together with the special eruption in some instances is also noteworthy, and certainly suggests some peculiar influence exerted by the drug, either on the blood itself, or upon the walls of the small bloodvessels.

The term acne has been applied with some confidence to the eruption, and it has hitherto been assumed, without exact evidence, that the drug especially affects the vascular system of the sebaceous follicles. The fact that bromide salts often induce an acneiform rash may have led to this opinion, and there seems little doubt that the sebaceous structures are specially stimulated by bromide.

The general aspect of an iodide rash forbids the use of the term acne. Often vesicular at first, and herpetic in appearance, the fact remains that little or no contents can be secured on puncturation of the little blebs, and such exuda-

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tion as is present is rapidly transformed, and tends to dessicate. It has been surmised that the defective action of the kidneys has much to do with the production of the rash. Certainly the drug continues to be eliminated for some time after the remedy has been withheld. Some observations I made upon the passage of this and other medicines through the kidneys in cases of nephritis, some years ago,* would tend to show that this eliminant power varies considerably in different cases. The purpuric condition, indeed, sometimes supervenes in cases of Bright's Disease treated in part by acid tartrate of potass.

So far as there is at present any evidence, the existence of syphilitic cachexia does not in any appreciable degree appear to determine the occurrence of an iodide rash.

XI.—*A Case of Polypi of the Antrum in which watery fluid dropped from the Nostril.* By Sir James Paget, Bart. *Read November* 22, 1878.

THE clear fluid shown to the Society dropped and was collected in a few hours from the left nostril of a lady 49 years old; and similar fluid has been dropping from it, with rare intermissions, for eighteen months. She is a robust and healthy-looking person, and, in several examinations, I have failed to find either any signs of general ill-health, or any appearances of disease in or near the nostril. There is nothing like polypus, or unhealthy membrane, or swelling as of a cyst; no nasal obstruction or unusual flow of tears; no swelling or tenderness; nothing whatever to indicate the source of the fluid. And the history of the case is nearly as insignificant. In November 1876, when the patient was in her usual good health, she received a heavy blow over the left frontal sinus. It seemed to do no harm, and she might have forgotten it, but that in January 1877, she had for one day a very severe headache. She had had none like it before and has had none since. In the following February she had a mental shock and great distress, and in May 1877, the dropping began.

From that time to this it has continued. Once, in May 1878, it ceased for a fortnight, while she had bronchitis and took morphia and did nothing, but lived in one room quietly

* 'St. Barth. Hospital Reports,' vol. iii. 1867, p. 225.

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and without anxiety; and once during six months it ceased in the night; but with these exceptions the dropping has been constant. A small drop falls or runs down on the lip every five or six seconds, and about four ounces were once collected for me in an afternoon and evening. The quantity is generally nearly uniform, but it is always increased by mental distress, or by much exertion, or by straining. At night, during sleep, much of it collects in the nostril and is poured out when the posture of the head is changed. Not a drop has ever come from the right nostril, unless when the left nostril and the upper part of the pharynx have become filled with fluid during sleep at night; and then, on turning the head downwards and to the right, the fluid pours through both nostrils.

The collected fluid looks like pure water, or like the fluid of the pia mater, or that of an acephalocyst. In long standing, it deposits only a minute quantity of greyish substance, in which neither Mr. Butlin nor I, in repeated examinations, have been able to find more than may be regarded as the débris or chance-materials washed off the surface of the nasal mucous membrane; some granular and molecular matter; a few epithelial cells, and a few round cells like leucocytes, or the once-called mucous corpuscles.

Dr. Russell was so good as to examine some of the fluid for me, and reported as follows:—'100 parts of the liquid contains 1·15 of solid matter in solution, consisting of

0·965 inorganic matter
0·189 organic
1·154

'The liquid is slightly alkaline. It contains proteid matter, probably albumen; and there is no indication of grape-sugar in it. The solid residue is principally chloride of sodium; but it contains phosphates, and, I think, iron.'

In a specimen collected more recently, and including a large proportion of fluid which accumulated in the nostril and above the palate during sleep, the specific gravity was 1·004, and the quantity of débris much larger; and this included, with films of nasal epithelium and lumps of granular matter, some minute octahedral crystals like those of oxalate of lime.

Mr. Lawson examined this patient a year ago. The fluid was then dropping at the rate of 314 grains in twenty minutes, and he has given me an analysis of it by Mr. Thomas Taylor.

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The specific gravity of one specimen was 1009·3; of another, 1010·44; the dry solid matter obtained from 100 fluid grains of the former was 1·2 grains; of the latter, 1·26. And the solid matter consisted of albumen, 0·05; other animal matter, 0·43; chloride of sodium, 0·78; with traces of carbonate of soda and phosphoric acid.

Supplement.

When the paper was read to the Society, I was quite unable to tell the source of the dropping fluid, and believed that no similar case had been published. But, by the kindness of Dr. Neale and Mr. Charles Hawkins, I was referred to a similar case, related by Dr. Elliotson in the 'Medical Times and Gazette' of September 19, 1857, and, more briefly, by Sir Benjamin Brodie, in the observations which he left in manuscript and which are published in the third volume of his Works (p. 665). The patient was twice subject to the dropping of fluid. First, when she was 26, it began almost suddenly, and so ended after thirteen months. Then, when she was 40, it began slowly, and so ended after 23 months. The quantity of fluid discharged was greater than in the case I have related; it seems to have been usually two quarts, and once was three quarts, in the day. It dropped from the left nostril alone, and was in all its characters like that which I have described; but there was nothing found to indicate its source.

Sir Benjamin Brodie believed that he cured the patient with sulphate of zinc, used both locally and internally. Certainly after the use of his prescription the flow of fluid ceased, and did not return for fifteen years; and, on the chance of doing good, I advised for my patient the same treatment, namely, to take a grain of sulphate of zinc three times a day, and to increase the dose gradually to twice that quantity, and to inject into the nostril three times a day a solution of 3 grains of the sulphate of zinc in an ounce of water.

This plan was steadily followed for about six weeks; then the dropping of the fluid gradually diminished, and in two or three weeks more completely ceased.

The patient remained well and lived actively, feeling free from all discomfort, till a month after the cessation of the dropping, when she was subjected to great mental distress and fatigue, and exposed to cold. One evening, returning home tired and chilled, she complained of severe headache.

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She took strong tea, and, soon after, two doses of 20 drops of liquor opii. Both these she vomited, and so she did a grain of opium which was taken a few hours later.

On the second day of her illness, Dr. Norton, to whom I am indebted for an account of it, found her pulse only 90 and her temperature normal; but the vomiting continued till the evening. Then, after a period of quietude, she became in the early morning very restless and delirious, constantly moaning and putting her hand to her head. Her pupils were contracted; and after this, with signs of acute brain-disease becoming gradually more intense, she died comatose three days from the beginning of her illness.

On examination, the whole of the cerebral pia mater and arachnoid appeared more than naturally vascular, and over large portions of the anterior cerebral lobes, and some parts of the base of the brain and of the cerebellum, the pia mater was almost symmetrically infiltrated with pale greenish-yellow soft lymph. The whole base of the skull, the cribriform plates of the ethmoid bone, the olfactory bulbs and the dura mater in relation with these, were completely healthy. The examination was made the more carefully because of a suspicion that it might have been subarachnoid fluid which had dropped from the nostril. Nothing in evidence of such a supposition could be found.

The lining of all the nasal cavities and sinuses, except that of the left antrum, appeared quite healthy. Of this antrum the bony walls were unchanged; its shape and size were natural, and nothing external indicated any change within. But its floor was covered with two broad-based convex polypoid growths, deep clear yellow with the fluid infiltrated in their tender tissue, and covered with exceedingly thin smooth membrane traversed by branching blood-vessels. They were of rounded shapes, about ⅝ of an inch in diameter and ½ an inch in depth; they looked like very thin-walled cysts, but were formed of very fine membranous or filamentous tissue infiltrated with serum. On the outer wall of the antrum were flattened soft yellow masses which appeared as the residue of one or more similar polypoid bodies collapsed after breaking or accidental injury and the escape of the greater part of the serous fluid.

The rest of the mucous membrane lining the antrum was thick, pale, soft, and rather coarsely granular, changed as one might expect it to be in chronic catarrh; and at one spot was a small prominent oval mass of cheesy-looking

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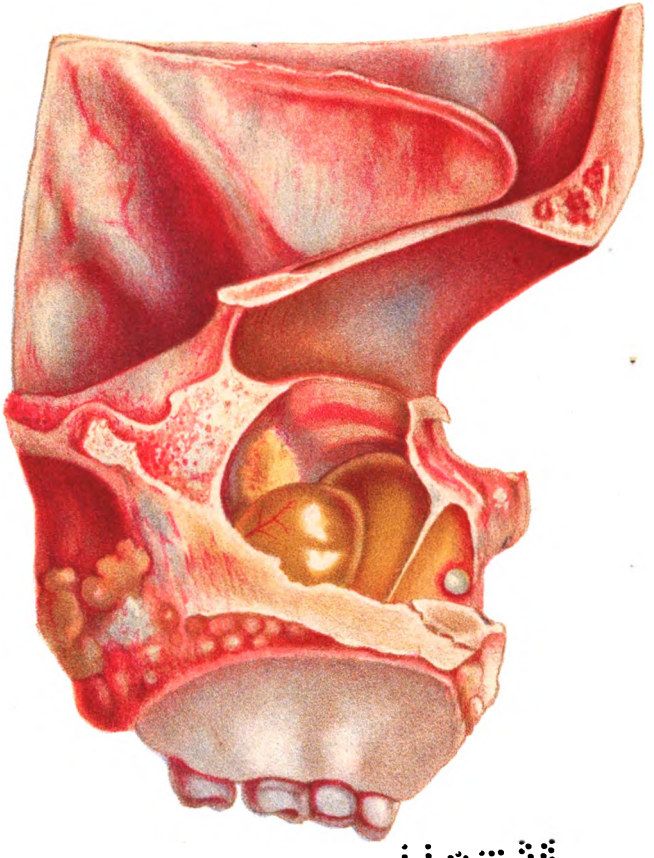

U of M

R. Mintern lith. Mintern Bros. chromo.

Sir James Paget's, case of Polypi of the Antrum.

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matter, such as might be the residue of a collapsed and degenerated polypoid growth. A few very fine soft filaments traversed the antrum, like threads of fibrine.*

The disease which I have thus described has been well known since the publication of the essays of Giraldés,† Luschka, and Virchow.‡ But neither in these nor in any other works to which I have been able to refer have I found any mention of the dropping of fluid from the nostril as one of the signs of either cysts or polypi in the antrum. The fact, however rarely it may occur, is interesting both because it may help in diagnosis and because it affords an instance of the copious production, whether by secretion or by filtration, of a fluid of less specific gravity than any produced either naturally or in disease, unless it be the subarachnoid fluid. The apparent utility of the sulphate of zinc will deserve to be tested in any similar case; two cases in which it seemed successful are not nearly enough for proof.

XII.—*Case of Bronchiectasis and Localised Empyema treated by Tapping.* By C. Theodore Williams, M.D. *Read November* 22, 1878.

CHRISTOPHER C., æt. 29, single, by occupation a dock labourer, was admitted into the Brompton Hospital, May 17, 1877, with the following history:—

He had been subject to convulsions in childhood, and had had epileptic fits at the age of 21. He stated that on January the 5th last he was seized with darting pains in the lower portions of both sides of his chest lasting three days, followed by a convulsive cough and fœtid expectoration, the latter and his breath being so offensive in smell as to cause him to vomit almost every day. The cough had continued up to the present time. A month after the first attack hæmoptysis came on to the extent of between two and three pints, the blood being of a bright colour.

He had wasted considerably, losing two stone, his weight on admission being 9st. 8lbs.

On admission, cough moderate by day, but trouble-

* The specimen is in the Museum of the College of Surgeons. The appearance of the parts in the recent state is well shown in a drawing by Dr. Westmacott.

† 'Des Kystes muqueux du Sinus maxillaire.' 4to. Paris, 1853.

‡ 'Geschwülste,' vol. i. p. 245.

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some and convulsive at night; expectoration about 6oz. in the 24 hours, consisting apparently of pure pus; night-sweats present; great weakness and languor; appetite bad; tongue clean; bowels constipated. Pulse 100.

Physical Signs.—Slight dulness over the lower third of right chest anteriorly and posteriorly; the breath sounds being rather deficient. Dulness and crepitation over the lower third of the left chest, most marked behind. Three days after admission, patient was ordered to take an ounce of mistura vini gallici every four hours, and mistura ipecacuanhæ cum ammoniâ with 10 minims of glycerine of carbolic acid also every four hours. The diagnosis was gangrenous pneumonia of the lungs, the left being chiefly affected.

May 30.—About the same; pulse, 120; respiration, 40; temperature (evening) 100·8° F.

June 4.—Cough very troublesome; still occasional sickness, caused by fœtor of breath and expectoration; lung tissue detected in the latter.

June 18.—Temperature has fallen to normal; other symptoms about the same. Cavernous sounds audible in the left interscapular region; crepitation has disappeared.

July 30.—Has improved in general health, and gained 7½ lbs. in weight (10st. 1½lbs.). Cough and expectoration less; fœtor has disappeared, and consequently the vomiting. Cavernous sounds audible as above in the left scapular region, and tubular sounds above the left scapula. Temperature morning and evening about normal. Patient walks daily in the grounds of the hospital.

August 16.—During the last fortnight the patient has become much worse. Ten days ago he had a rigor, and since then temperature has risen almost every evening to 102° F., in the morning remaining between 97° F. and 98° F. Appetite considerably decreased. Cough severe, expectoration copious, and again fœtid, causing sickness two or three times a day. Hæmoptysis ℥vj three days ago. He has lost 3½lbs. in weight. Fresh crepitation is audible at the base of the left lung.

Sept. 8.—Has been confined to his bed ever since last report. Has had hæmoptysis twice—on one occasion amounting to ℥vj. Lung tissue has been again detected in the sputum. In the left lung cavernous sounds are audible over a larger surface.

About this time Dr. C. J. B. Williams, happening to visit the hospital, examined the patient with me, and expressed an opinion that if the size of the cavity at all corresponded with

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the area of cavernous breathing there ought to be tinkling sounds audible.

Oct. 15.—Cough still severe, harassing and paroxysmal; expectoration purulent, abundant, and very offensive, amounting to one pint daily. Patient cannot sleep without sedatives.

Physical Signs.—Over the posterior surface of the left lung dulness is absolute from the eighth rib to base, vocal fremitus being present. Cavernous sounds are audible over an area limited above by the eighth rib, below by the tenth, internally by the spinal column and externally by a line curving upwards at a distance of from 2 to 5 inches from the spine. Over this space cavernous breathing and pectoriloquy were loudly audible, and suggested the idea that the cavity lay immediately below the lung surface.

As the expectoration continued very fœtid, and the patient was becoming more and more poisoned by his own exhalations and exhausted by his efforts to raise the sputum; and as he had repeatedly asked me to relieve him by operation or otherwise, I deemed it worth while to try to make an opening where the physical signs indicated that the cavity was situated close to the thoracic wall.

On consultation with Dr. Douglas Powell, it was agreed to pass an aspirator needle through a marked spot, and if we succeeded in reaching the cavity and fluid contained therein, to introduce a drainage tube.

Oct. 6.—The patient being placed under the influence of ether by my clinical assistant, Dr. Ritchie of Montreal, Dr. Law, the resident medical officer, passed an aspirator needle between the eighth and ninth ribs, about 4 inches to the left of the spine. The needle went rather deeply in, and when it had reached its furthest point it gave to the hand the impression of its sharp end lying in an open space where its movements were unopposed. It rose and fell with the movements of respiration. On exhausting, a little blood appeared in the receiver, but no pus. The needle was then withdrawn, and the opening closed with lint and collodion.

Oct. 17.—Patient expectorated a little blood mixed with his ordinary sputum last night, and this morning he complains of pains in the shoulder and infra-mammary region, the physical signs remaining the same.

The next day the pain subsided, but the patient remained in the same deplorable condition as before the aspiration. Mr. Marshall, the consulting surgeon to the hospital, kindly

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examined the patient with me, and advised a further attempt to be made to reach the cavity, and accordingly, on October 31, at 3.30 P.M., the patient was partially put under the influence of chloroform. A spot in the ninth interspace was selected, below the former scene of attack, about 4½ inches outwards from the spine, and Dr. Law passed a trocar and vulcanite cannula through this until he felt the trocar had reached a free space. It was then withdrawn, and immediately a quantity of brownish opaque and extremely fœtid fluid rushed out. The flow at first was rapid but afterwards slackened, and air passed in and out through the cannula with much bubbling; about 1½ pints of fluid were evacuated, and found under the microscope to consist of broken-down pus and blood, chiefly of the former.

When nearly all the fluid was evacuated, the patient became suddenly pallid, the respiration exceedingly difficult, the pulse 120 and fairly strong, but the aspect was alarming. The tube was at once plugged with cork, brandy and water and ammonia were administered, and in half-an-hour the patient had to a certain extent rallied. Pulse 130; respiration, 48. Brandy in ℥ss. doses in beef tea and milk was administered every half-hour from 4 P.M. till 10 P.M. At 7 P.M. the patient fell asleep, the respirations which had risen to 62 falling to 40.

11 P.M.—Dr. Tatham, who had rendered great assistance at the time of the operation, and given us several valuable suggestions, kindly saw the patient, and found him awake, and perspiring freely. Pulse, 128; respiration, 64. The plug was withdrawn from the cannula, and on the patient lying back and coughing 2oz. of the same fœtid fluid escaped. Air passed in and out as before, and a large oakum pad was bandaged on to soak up the discharge. The patient had by this time regained his usual upright position, propped up by pillows, and leaning a little forward on account of the dyspnœa.

Nov. 1.—Patient states that during the night his cough was even worse than usual. He slept but little, and then only in short snatches. Temperature, 99·4° F.; pulse, 120. At 10.30 A.M. Dr. Law washed out the cavity with a weak solution of Condy's fluid. The external end of the cannula being lower than the internal, owing to the swelling about the lips of the wound, the tube has a tendency to come out in spite of the strapping by which it is retained. The edges of the wound and the surrounding skin are swollen and tender.

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During the patient's ordinary respiration, there appears to be no current of air, but during cough it rushes in and out, expelling more or less fluid.

At 3.30 P.M. I found the swelling most marked on the left side of the opening. On probing the opening a somewhat elastic resistance was experienced at the end of the cannula, the patient not feeling it unless some force was used. Aspect tranquil, cough troublesome, expectoration about half a pint of muco-purulent fluid, rather less offensive than that of yesterday. Pulse, 120; respiration, 48, but easy; temperature, 102° F. Taking ʒss. of brandy every two hours. India-rubber tubing was connected with the cannula to conduct away the discharge into a bottle.

Physical Signs.—Marked resonance has replaced the dulness of two days ago, and extends from the wound to the spine, being limited above by the eighth rib, and below by the ninth. Amphoric respiration and tinkling sounds audible between wound and spine.

Nov. 2.—After hypodermic injection of ⅛ gr. of morphia, he passed a more comfortable night, but still was much troubled with the paroxysmal cough and fœtid expectoration. This morning the cannula was found to have slipped out in spite of the strapping, a result largely due to the swelling of the surrounding parts, which is partly emphysematous, partly inflammatory. A piece of india-rubber tubing of the same calibre was introduced, and the cavity was washed out with carbolic acid solution, 1 in 40. Patient has taken all the nourishment and brandy ordered, but has vomited twice on account of the cough; tongue white and coated; bowels not open for two days. Pulse, 130; respiration, 48; temperature varies from 99·8° F. to 102° F.; expectoration the same in character and amount; physical signs the same.

At midnight he became worse, the cough and expectoration increasing, and some rusty-coloured sputum appearing, and perspiration being very profuse.

Nov. 3.—Looks very haggard, and quite worn out; still takes food and stimulants freely; tongue furred; bowels open; much troubled by the fœtid matter, which he cannot expectorate; pulse 120 to 130, small and compressible; temperature 98·6° F.; cold sweats on face. Died at 12.15 P.M.

The treatment by medicines has been omitted, to avoid confusion and to allow the attention of the members to be exclusively directed to the clinical phenomena and the various points of the operation. The principal drugs used were car-

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bonate of ammonia and ipecacuanha wine, and, later on, ammonia and bark, with carbolic acid inhalations; glycerine of carbolic acid was also given internally. Creosote and tar pills were also tried, but with no good results as regards reducing the fœtor of the expectoration. During the last three weeks he took mist. ætheris cum ammoniâ every four or six hours, and, on account of his great restlessness and nervous excitement, hypodermic injections of morphia were used, but very cautiously on account of the dyspnœa. Stimulants and liquid food were freely administered after the operation, and undoubtedly rallied him from its shock.

The autopsy took place forty-eight hours after death. The body was moderately emaciated; rigor mortis was persistent. The opening into the thorax was visible between the ninth and tenth ribs, four inches to the left of the spine. The pericardium contained about two ounces of turbid serum, and some friable lymph appeared on the anterior surface of the heart, that organ itself being healthy and the valves normal. The right lung was in the first stage of pneumonia, and also contained a small cretaceous mass the size of a pea in the lower lobe.

The pleura was adherent over the whole anterior surface and over the upper third of the posterior. The lower two-thirds had evidently been the site of a local empyema, the walls being thickened and pus-secreting. This pleural abscess had the following relations. It extended over the whole posterior surface of the lower lobe and over the lower half of the upper lobe, and passed into the sulcus between the two lobes, thus reaching and probably infecting the pericardium. Into this abscess the hole made by the trocar and cannula, between the ninth and tenth ribs, opened immediately above the diaphragm. Situated nearly opposite to it in the pulmonary pleura, but slightly higher up, was a very small aperture, apparently of artificial origin, which, on probing, was found to communicate with a dilated bronchus which lay close beneath the pulmonary pleura. The wall of the empyema gave no offensive smell, but had an odour of carbolic acid which had been used once for injection.

The lung itself was considerably shrunken, and the diaphragm raised. The upper lobe was crepitant, and, beyond being congested, presented nothing unusual. The lower lobe was consolidated, the texture being tougher in consistence than that of ordinary croupous pneumonia, but at the same time not absolutely fibroid. The bronchi of the lower lobe were widely dilated to their very extremities, and appeared

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to have entirely lost all contractility. One was traced to the margin of the pleural abscess, with which it communicated by the small aperture (of artificial origin) above mentioned.

Underlying the portion of the chest wall where cavernous sounds were heard was an anfractuous cavity consisting of several irregular passages separated by smooth trabeculæ, resembling the columnæ carneæ of the heart in appearance. No portion of this winding excavation had a diameter as large as that of a good-sized walnut, and most of it was about the size of a filbert, but the whole formed a labyrinth into which several of the dilated bronchi opened. Both cavity and bronchi contained fœtid muco-purulent secretion. No tubercle was detected anywhere. The bronchial glands were slightly pigmented. The other organs were healthy.

Remarks.—I bring this case before the Society, because, although the operation was a failure, the history contains much matter for reflection as regards the development of the phenomena, the significance of the physical signs, and the treatment adopted.

The pathology, as proved by the autopsy, was that of chronic pneumonia of both lungs, followed by resolution in one, and by pleural adhesion, consolidation, and dilatation of the bronchi in the other. The difficulty of expectoration from the loss of elasticity in the bronchial walls gave rise to accumulation and decomposition of the secretion, and hence the fœtor. Ulcerative processes in the bronchi were set up in consequence of the irritating secretion, and in this way was formed the very remarkable cavity which has been described, the formation of which appears to have given temporary relief to the lung, and to have caused improvement in health for the time being. At a later date came the effusion into the non-adherent portion of the pleura, and its subsequent conversion into a fœtid empyema, either by absorption through the lymphatics of the bronchi or by infection through the aspirator needle. The pericarditis probably arose through contiguity of the septic matter in the pleura, and the right lung was infected by secretion inhaled from the left—hence the pneumonia which terminated the patient's life.

The evolution of the physical signs, though not so clear, is full of interest.

On admission, pneumonia of both bases was indicated, but while the dulness and crepitation disappeared from the right lung, it lingered to a diminished degree in the left, and

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was replaced in the month of June by cavernous sounds audible in the outer scapular region, which, when taken in connection with the finding of lung-tissue in the sputum, clearly indicated ulceration of the lung. After this the physical signs showed quiescence for a certain period, till the occurrence of the rigor in August, which was followed by fresh crepitation at the base of the lung; and after the hæmoptysis in September the area, over which cavernous sounds were audible, considerably increased. The fact, noted by Dr. C. J. B. Williams, that while cavernous sounds were audible over a large surface no amphoric respiration or tinkling could be heard, did not receive, perhaps, as much consideration as it ought to have done.

The labyrinthine nature of the cavity, and its close connection with several dilated bronchi, caused so much reverberation that it appeared very superficial and considerably larger than it really was. This reverberation, and the presence of vocal fremitus, also masked the existence of the limited effusion, which the absolute dulness at the base led us to suspect; the presence of vocal vibration being due, I suppose, in this instance, to the pleura being rendered very tense from the amount of effusion. The possibility of the effusion being caused by the introduction of the aspirator needle is negatived by the fact that the increase of dulness preceded the first operation. The diagnosis of a cavity was undoubtedly right, but it seems impossible to have predicted its particular form in this case, or its connections with several bronchi; nor had we any means of determining from the character of the sputum the particular process of lung-disintegration, for on each occasion the microscopic examination showed heavy hook-like fibres of yellow elastic tissue, and no complete sections of a small bronchus, which last has been stated to be the characteristic microscopic feature in bronchiectasis.

Now we come to the two operations.

In the first the aspirator needle must have crossed the effusion, and penetrated one of the enlarged bronchi, and as this probably contained only thick tenacious secretion, it is not surprising that nothing but blood followed the exhaustion of the needle. The pain in the left shoulder and the infra-mammary region on the following day indicated some fresh irritation of the pleura; and it is possible, as I have before stated, that the needle, on its withdrawal from the fœtid secreting bronchus, may have infected the fluid in the

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pleura, and converted a serous or even purulent effusion into the fœtid matter which was evacuated fourteen days later.

The second operation was successful as far as it went, but did not relieve the patient of the fœtid pulmonary secretion, though it got rid of the empyema.

The death of the patient, through infection of the other lung, justified completely the attempt to operate; for if by any means we could have removed the poisonous material which the patient's failing strength precluded his expectorating, relief, and in time cure, might have resulted.

Unfortunately the tenacious nature of the sputum and the shape of the excavation prevented our attempt being successful, but it furnished valuable experience to be used on future occasions.

XIII.—*Four Cases of Popliteal and Femoral Aneurism successfully treated by Esmarch's Bandage and Digital Compression.* By Jonathan Hutchinson. *Read December* 13, 1878.

In the following cases the plan of treatment first suggested I believe by Dr. Reid, and consisting in the application of Esmarch's bandage and strap, was adopted. No attempt was made to empty the sac, which was indeed merely supported lightly by the bandage, the quantity of blood in it being only slightly diminished.

Case I.

Mr. E. M. S., æt. 26, consulted me, on the recommendation of Mr. Drew, on July 3, 1877. He had a large aneurism in the left popliteal space. He was the son of a clergyman, and not wealthy, and readily consented to come into the hospital for treatment. He had recently returned from a sea voyage, and was in good health. Stiffness and pain behind the knee had been felt for three months, but the pulsating tumour had been recognised only about three weeks. He had never had syphilis. The aneurism filled the popliteal space, and extended upward towards Hunter's canal. Its pulsation was strong and visible, and a loud bruit was heard.

After six days' rest in bed, during which comparative abstinence from fluids was enforced, we applied Esmarch's

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bandage under ether. The patient being soundly asleep, I bandaged the limb tightly from the toes to the tumour, then covering the tumour with cotton wool, the bandage was put lightly over it, and again more firmly up the rest of the thigh, finally the strap was tied as tightly as possible round the upper third of the thigh. The patient was kept under the influence of ether for an hour and ten minutes, and at the end of that time the strap was removed and a horse-shoe tourniquet was substituted, care being taken during the change not to allow the artery to fill. The elastic bandage had been removed as soon as the strap was applied, and on the removal of the latter the whole limb was wrapped in cotton wool. We continued the use of the horse-shoe tourniquet as a matter of precaution for nine hours, but no pulsation ever returned in the sac. The cure was indeed complete from the time of removal of the strap. The tumour gradually contracted, and the man left the hospital quite well six weeks after his admission.

Case II.

The subject of my second case was an artilleryman from Shoeburyness, who was sent to me by Dr. Andrew Clark. He was a robust, vigorous man of 41. He had been cured of an aneurism in the calf of the same leg in a regimental hospital two years previously, having on that occasion had thirteen days of instrumental compression. There was a history of syphilis twenty years ago, some characteristic scars remained, and there was an osseous node on one tibia. The aneurism for which he now came under treatment filled the left popliteal space, and was about as large as an orange. He had had pain in the part for about a fortnight, but had only noticed the swelling a few days. As the increase had been rapid, we did not like to lose time, and accordingly, on the day after his admission, July 25, Esmarch's bandage was applied with the same precautions as in the preceding case. It was kept on for an hour, and afterwards tourniquet compressors were used. It was found, almost immediately after untying the strap, that pulsation was still present, and it soon became evident that little or nothing had been gained. After twelve hours' interrupted instrumental compression it was abandoned.

Four days later, July 30, ether was again given, and the bandage and strap applied. It was kept up for nearly two hours, and on its removal, relays of dressers were ready

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to keep up digital compression. The tumour beat on removal of the strap, but not so forcibly as before, and great pains were taken to prevent its doing so even for a moment. The man bore the fingers well, but could not bear an instrument. Under the able direction of Messrs. Bennett and Atkinson, house surgeons, digital compression was maintained continually for eleven hours (i.e., till 5.30 A.M.). During the first four hours (from 6.30 to 10.30), it had been very difficult to prevent pulsation in the sac, the slightest relaxation permitting it. After that time, however, it became much more easy, and about midnight the pulsation became very feeble. It is probable, therefore, that consolidation was complete in about eight hours, and that the rest of the compression was precautionary against return. After the discontinuance of all compression the tumour remained pulseless. The man was kept in bed for a month, and then left the hospital well, the tumour having almost disappeared.

It should be stated that iodide of potassium had been given in full doses during the whole of the treatment, and a dry regimen enforced.

Since these cases were communicated to the Society I have treated two others on the same plan, and with like success. In one, the aneurism was popliteal, and in the other femoral. In both it was necessary to continue digital compression some hours after the Esmarch's strap was removed. These four cases comprise all the aneurisms of the lower extremity which I have had under my care during the last two years, and in all the same plan has been successful. I cannot but think that we possess in the use of Esmarch under ether a very valuable addition to our means of treating aneurism. It appears important to success that arrangements should be made for efficient digital compression immediately that the strap is removed, and that, if possible, the tumour should not be allowed to fill again. In three out of my four cases it was the digital compression which completed the cure; in only one was solidification complete from the removal of the strap. In all four cases the dry diet was enforced, and in three the patients had a few days' rest in bed before treatment was commenced. In three, the iodide of potassium was given throughout in ten-grain doses. In future cases I shall incline to wait still longer (if the local conditions permit of delay), and give the iodide meanwhile. I must not omit to express my obligation to my colleague,

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Mr. Waren Tay, for the zeal with which he assisted in superintending the details of all four cases, and to which their success was in a large extent due.

XIV.—*Perforation of the Appendix cæci vermiformis and Cæcum by a Pin—Abscess external to the Cæcum—Pyæmia—Empyema—Paracentesis—Tube, which was introduced to evacuate the contents of the Pleural Cavity, passed into an Abscess lying beneath the Liver.* By T. WHIPHAM, M.B. *Read December* 13, 1878.

CHARLES ISAACS, æt. 18, a whitesmith, was admitted into St. George's Hospital under my care on January 25, 1878.

His family history was good.

History.—Last August, after rowing all one day on the Thames, he bathed in the river, and took cold. Two days afterwards he was attacked with severe pain in the right side, and shortly afterwards the left side was affected with similar pain; he had also some diarrhœa. He became excessively weak, so weak that he was unable to stand, and he sweated profusely at night. He was ill for about six weeks, and then recovered perfectly. No history or manifestations of syphilis were discovered; he was almost a total abstainer from liquor.

The present illness commenced seven days ago. He was exposed on the roof of a house nearly all day, and went home in the evening feeling very chilly, and after he had gone to bed was attacked with a severe pain in the right side, accompanied by profuse perspiration. The pain was of a sharp, lancinating character, and shot up into the axilla. In spite of this attack he went to his work next day, and as he returned home in the evening he experienced pain in the right inguinal region. On the third day he remained at home, as the pain had extended to the right flank, and he had vomited once; on the fifth day the pain was more severe, and had spread as far as the epigastrium; the bowels, which had been hitherto regular, became purged, and he passed as many as seven or eight very dark motions during the day; he was attacked with cough, accompanied by expectoration. During the fifth and sixth days he passed about 14 motions in the 24 hours.

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On Admission.—The skin was hot but moist; the face was flushed; there was an eruption of herpes on the lips; decubitus was dorsal and to the right. The pulse was 88, soft; respiration, 32, fairly full; the cough caused a stabbing pain in the abdomen. The tongue had a brownish white coat towards the base, and was red and raw-looking at the tip and sides; there was profuse diarrhœa. The abdomen was tender, and especially so in the right inguinal and epigastric regions, and there was but little abdominal movement with respiration. It was impossible, by reason of the tenderness, to detect any tumour or enlargement of the abdominal viscera, either by palpation or percussion. About the middle of the sternum was a rose-coloured spot, which disappeared on slight pressure, but which was not raised above the level of the skin.

Chest.—Percussion was somewhat dull under the right clavicle, and sonorous rhonchi were audible, with inspiration and expiration in both subclavicular regions. Posteriorly the right side was quite dull from the inferior angle of the scapula downwards, vocal fremitus was diminished; respiration was very deficient; no ægophony existed; there was no pain. The lower part of the left chest was also dull to some extent, but breathing was normal.

He could take no solid food. Ordered haust. ammon. cit. efferves., 4tâ quâque horâ. He passed five motions. Beef tea and milk diet.

27.—Eight or nine motions of a dark colour. P. 100, weak, resp. 33; urine passed at stool.

28.—Six yellow motions, not watery; abdominal pain excited by upright position; no abdominal movement, with respiration; urine orange-coloured, clear, acid, abundant, faint trace of albumen; a round red flush on each cheek.

29.—Eight motions of a yellowish green colour, containing shreds of mucus. Belly rather more distended, but less tender; sonorous rhonchi and coarse râles over lower parts of both lungs. Deficient fremitus on the right side. Lips dry and parched; slight delirium last night.

Feb. 1.—Dulness extending from an inch above the inferior angle of the right scapula to the base of the lung. Breathing distant. The pain in the right iliac region is much less, but there is great pain in the upper part of the belly on this side. P. 92. R. 44.

2.—Scarcely any abdominal pain; i.e., only occasional stabbing sensation in the right flank, but great general ten-

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derness and friction in the right flank. Chest symptoms as above. Ordered sp. ætheris ♏xx., haust. cinchonæ ℥jss. ter die.

3.—Sp. vin. gall. ℥iv.

A small aspirator needle was introduced between the seventh and eighth ribs immediately below the inferior angle of the right scapula, and some thin yellow pus was withdrawn; a tube was ordered to be passed into the pleural cavity. Before the operation friction was audible in front of the upper part of the right chest, which in this region was hyper-resonant. The tube was introduced between the seventh and eighth ribs, at the side of the chest, and, owing to some misunderstanding, rather towards the front, and 16 ounces of reddish-brown offensive pus were withdrawn. The patient sweated profusely during the night and was slightly delirious. The bowels were open three times. P. 100. R. 52.

6.—Feels better and much easier in his side. Discharge from the tube more abundant during the night than in the day. Bowels open four times, fæces consistent, tongue red at the tip and sides, coated in the median line. No pain whatever in the belly; slight abdominal movement with respiration; appetite improved; urine orange-coloured, clear; lithates; phosphates scanty; no albumen. P. 80. R. 30. Diet, fried fish; strong beef tea, Oj.; ale, Oj.; milk, Oij.

7.—A fluctuating tumour has made its appearance over the angles of the ribs at the lower part of the right chest, but without redness of the skin, or any appreciable elevation of temperature. General dulness over the whole of the back of the right chest, with squeaky rhonchi and coarse râles on both sides. Right apex in front hyper-resonant. Dyspnœa increased. Sputa white, frothy, with large air-bells. The discharge from the tube is diminished; the cavity to be washed every morning with warm solution of carbolic acid. Urine acid; lithates; no albumen. P. 90. R. 36. Bowels open twice.

Feb. 9.—One formed motion. He is very weak. His knees are drawn up, and he again complains of pain in his belly. The pain is most intense at a point midway between the umbilicus, the symphysis pubis, and the anterior superior spine of the ilium on the right side; the whole of the right side of the abdomen is dull. Sputa solid and somewhat yellow. P. 88, intermittent. R. 34.

10.—A little blood in the sputa.

12.—A sensation of fulness on palpation in the right

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iliac region; tenderness in right lumbar, iliac, and inguinal regions, with dulness. Bowels act once in 24 hours; motions formed, and of yellow colour. Copious discharge from the chest, especially at night, of a light yellow colour. The swelling at the back has increased in size, and is very tender; there is slight distension of the superficial vessels, and fluctuation is evident. Dyspnœa at night. Urine dingy red; acid; no albumen. P. 96. R. 32.

13.—Ordinary diet. Milk, Oij. Two eggs.

16.—There is a large accumulation of pus behind, over the inferior angle of the scapula and as far as the tenth rib. Loud rhonchi and coarse râles audible all over the left lung; complete dulness over the right side from the spine of the scapula downwards; above that percussion was in some degree resonant. As there was scarcely any discharge from the side, the tube was removed and the wound closed.

17.—The abscess was opened by an incision near the inferior angle of the scapula. No communication between it and the cavity of the chest was discovered by probing. A large quantity of brownish-red fœtid pus was evacuated; the pus in all respects resembled that which had been discharged from the tube.

18.—Sp. vin. gall. ℥x. Haust. morph. om. nocte si opus sit.

19.—The sweating has diminished, and the flush has disappeared from the face. Tongue less red and raw-looking. The swelling on the back has subsided, and a probe passed into the opening made on the 17th passed downwards and inwards for a long distance, almost the whole length of the instrument. The discharge is profuse, and unaltered in character. Right chest somewhat resonant at the upper part. Auscultatory sounds on left side, as before. P. 116. R. 40.

24.—Free discharge again from the wound whence the tube had been removed. Scanty expectoration; sits up in bed, and preserves a fair amount of physical energy; mind clear and active; takes pleasure in reading. Face greatly emaciated and dusky. P. 75, jerky. R. 34. Between this date and the last note the patient had suffered greatly from dyspnœa and sweating.

26.—P. 104, fluttering and irregular. Face and tongue slightly blue. Effusion into both knee joints, but no heat, redness, pain, or tenderness. During the night free discharge occurred from the wound, at the back of the chest especially; less sweating and cyanosis. Face anxious. Urine dark red, abundant, acid; lithates; no albumen.

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27.—About 3 A.M. the patient began to suffer from an aggravation of the dyspnœa; he rapidly sank, and died at 5 A.M.

Autopsy 31 hours after death.

Externally.—One sinus opened in the axillary line between the seventh and eighth ribs on the right side. Another opened in the scapular line between the ninth and tenth ribs, burrowed extensively under the skin, and opened into an abscess which had formed below the under surface of the liver.

Pleuræ.—The right pleural cavity was filled with thin yellow pus, and lined with a pyogenic membrane; the pus was not fœtid, and there was no communication with the outside.

Lungs.—The right lung was adherent to the diaphragm, but the two upper lobes, quite devoid of air, were compressed against the spinal column. This lung was entirely carnified. The left lung was emphysematous, and to some extent congested. The bronchial mucous membrane was congested, and the tubes contained viscid mucus.

Heart.—The heart weighed 12 oz., and was normal in size and structure. The right ventricle contained a soft recent clot, which imperfectly surrounded fibrin of dull opaque appearance.

Liver.—The liver weighed 6 lbs. The upper part was adherent to the diaphragm and abdominal parietes. Beneath the under surface of the organ was a large abscess, containing pus of a red-brown colour. The capsule of the liver in contact with the pus had been destroyed, together with a thin layer of the tissue of the organ itself. The liver had generally a nutmeg appearance; no blocking of the vessels could be discovered.

Spleen.—The spleen weighed 11 oz., was dark-coloured and soft.

Kidneys.—The kidneys were coarse in appearance, and congested.

A limited abscess was found in the right iliac region; it extended as far as the promontory of the sacrum, and inferiorly to the summit of the bladder. The purulent contents were mixed with fæces. Free in the cavity of the abscess was a pin 1½ inch in length. The appendix cæci vermiformis was doubled on itself, and perforations were found at opposite points in the fold thus formed. The appendix thus doubled on itself was connected with the cæcum by soft lymph;

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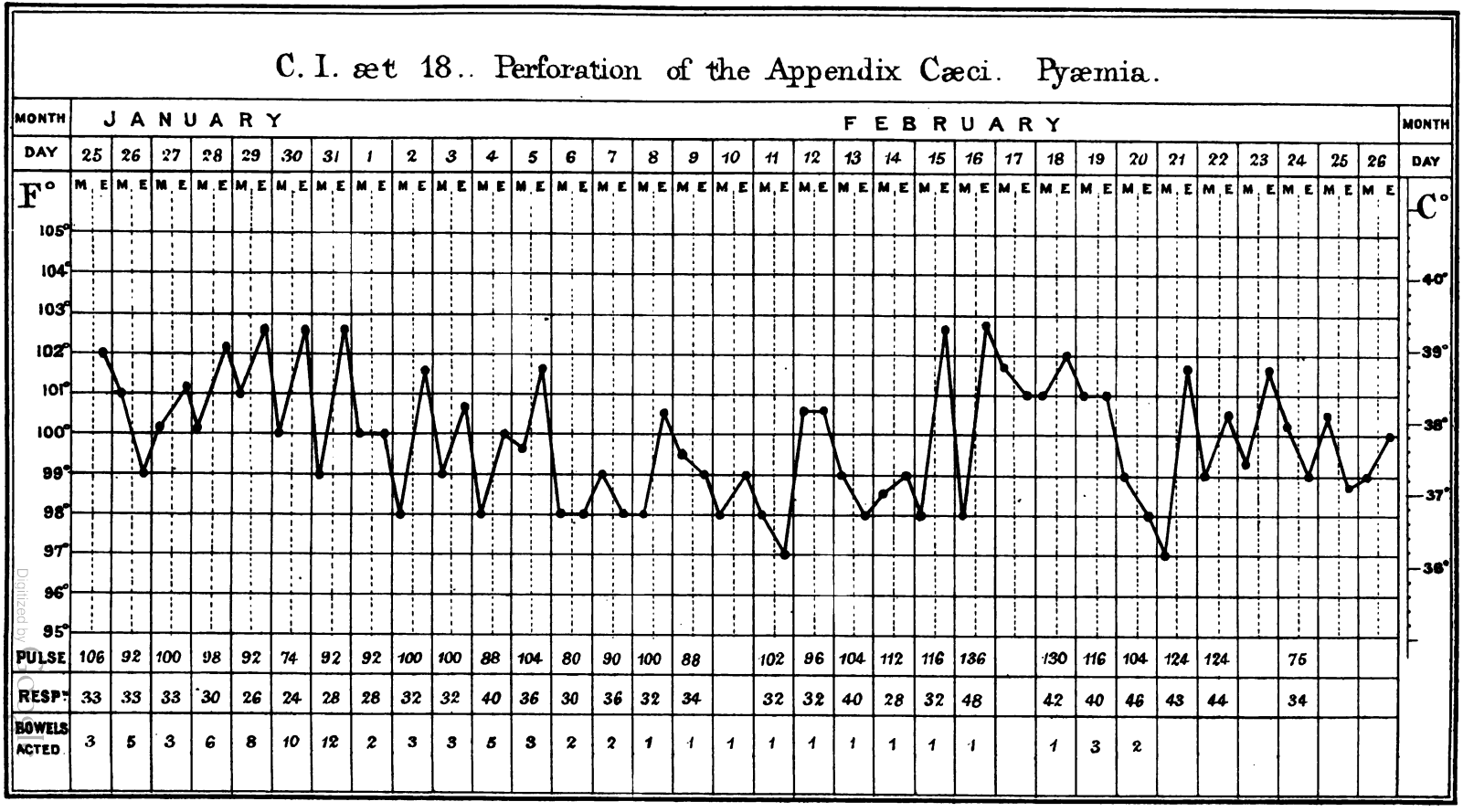
C. I. æt 18.. Perforation of the Appendix Cæci. Pyæmia.



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in this portion of the gut another perforation existed through which the pin had evidently found its way into the cæcum, and had finally made its way through the opposite wall of this portion of intestine into the surrounding tissue, thus setting up the suppuration.

The intestines were in other respects natural.

There was no connection between the abscess in the iliac fossa and that below the liver. The sinus in the axillary line led downwards among the muscles towards the upper abscess in the abdominal cavity; but owing to destruction of the tissues, the actual communication between the two could not be demonstrated.

Remarks.—The clinical interest in this case lies not so much in the perforation of the bowel as in the variety of the symptoms which complicated the diagnosis. It was evident from the history that the boy had suffered from an attack of pleurisy, but judging from the diarrhœa, the doubtful rose-coloured spot over the sternum, and the pain and tenderness in the right iliac fossa, it was also possible that he had enteric fever. This supposition was, however, negatived by the facts that his tongue had not the brown dry coating so characteristic of severe cases of this disease; that the stools were at first of a green colour, and that they almost suddenly became formed and natural in appearance. Eventually the yellow colour which the fæces subsequently assumed, together with the pain and tenderness which gradually extended upwards along the course of the colon even to the epigastrium, suggested the idea of ulceration of the bowel, which might have been of tubercular origin. No evidence, however, of tubercle was detected in the unaffected lung.

It has been stated that at the exploratory puncture of the chest yellow thin pus was extracted posteriorly by the syringe, but that on introducing a tube in the axillary line fœtid pus of a red-brown colour was discharged. The assumption, therefore, was that two (at least) circumscribed abscesses had formed in the pleural cavity, each of which had been tapped by the successive operations. There was, moreover, little doubt from the character of the discharge that the external abscess opened at the second operation had perforated the chest-walls, and that the pus had collected beneath the integument at the back, as was subsequently all but proved by the post-mortem examination. It was, however, definitely proved at the post-mortem exami-

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nation that the cavity of the chest had, save by the first puncture, never been tapped at all, but that the tube which, as was supposed, had been passed into a limited empyema lying in the anterior part of the right chest, in reality had evacuated the contents of the abscess which lay beneath the liver, and had pushed that organ upwards.

An objection may be raised to the treatment of this case, viz., that it was insufficiently carried out; that an attempt should have been made to establish an exit for the thin yellow pus found at the exploratory puncture. It must, however, be borne in mind that the pyæmic disease was very rapid in its course, that the boy had already undergone the primary puncture—the operation for the introduction of the tube; and, lastly, the evacuation of the contents of the abscess which had formed outside the chest. In his extremely debilitated condition further surgical interference seemed to be clearly contra-indicated.

Many cases have been recorded in which similar errors in diagnosis have been made; and quite recently a case was related in the 'Progrès Médical,' of March 16, 1878, which occurred at the Hôtel Dieu, in the practice of M. Berger, and in which an abscess of the liver was opened and treated for an empyema. The autopsy showed that the pleural cavity contained bloody serum; and that the hepatic abscess depended upon dysentery. The difficulty in the diagnosis is especially dwelt upon in the remarks on M. Berger's case, and is fully exemplified in the notes just read to the Society.

XV.—*An Apparatus for the Clinical Estimation of Hæmoglobin.* By W. R. Gowers, M.D. *Read December* 13, 1878.

OBSERVATIONS on the number of corpuscles in a given volume of the blood, the 'globular richness of the blood,' need, in most cases, to be supplemented by the determination of the amount of hæmoglobin which the corpuscles contain. The actual quality of blood depends not merely on the number of corpuscles, but also on their quality, i.e., the amount of their hæmoglobin. This may, and often does, fall as low as one-third of the normal quantity per corpuscle, and it is hence of great importance to be able to estimate its amount.

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The only exact method is the chemical estimation of the amount of iron contained in the blood. This is, however, a process which is unavailable for clinical work. The employment of the spectroscope, by which the point of dilution is noted, at which a certain absorption-band disappears, is also difficult in practice, and is scarcely a clinical method. Various other methods have therefore been devised for comparing the colour of a given dilution with that of a series of coloured standards—variously tinted to correspond to the different tints produced by the dilution with a given volume of water. All, however, appear to be more or less unsatisfactory in use.

The apparatus now shown also proceeds upon the principle of taking the tint of diluted blood as the guide to the amount of hæmoglobin, but it differs from other apparatus in the following particular. In all other methods a given dilution of blood is made, the tint of which is compared with a series of standards (tubes, a wedge-shaped colour test, or coloured papers). In this apparatus there is but one standard of the tint of a definite dilution of a given volume of blood in a given volume of water. The dilution of the blood to be examined is made until its tint corresponds to that of the standard, and the proportion which the volume of diluting liquid needed bears to that of the standard, indicates the proportion which the hæmoglobin in the blood examined bears to that of normal blood.

The dilution is made with distilled water. Chloroform and other re-agents have by some observers been employed to destroy the blood corpuscles, and dissolve out the hæmoglobin. I have found, however, that if blood is diluted with distilled water only, the solution obtained undergoes no change of tint during 24 hours, and that the precipitate which falls is, as a rule, colourless, evidently consisting only of the stroma of the corpuscles, from which all the hæmoglobin has been dissolved out.

On account of the instability of a dilution of blood, tinted glycerine jelly is employed as the standard, and the required tint can be obtained with great exactness by a mixture of carmine and picrocarminate of ammonia. This mixture not only resembles diluted blood in its tint, but gives, as Malassez has shown, nearly the same absorption-bands in the spectrum.

The apparatus consists of (1) two glass tubes of the same diameter. One of these (D) contains the standard, which is of

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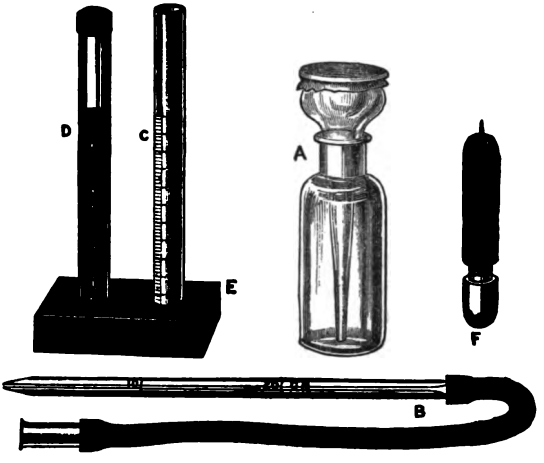
the tint of a dilution of twenty cubic millimetres of blood with 1980 cubic millimetres of water, i.e., a dilution of one in a hundred. The other tube (C) is graduated, 100 degrees = two cubic centimetres. These tubes in use are fixed side by side in a small wooden block (E). (2) a capillary pipette to hold twenty cubic millimetres (B). (3) a bottle with a pipette-stopper to hold the distilled water (A). (4) a guarded needle (F).

The mode of use of the apparatus is as follows: The tubes having been placed in the stand, a few drops of distilled water are placed at the bottom of the graduated tube. Twenty cubic millimetres of blood are then measured off in the capillary tube, and ejected into the distilled water in the bottom of the graduated tube, which is then quickly shaken



to secure the mixture of the blood and water, and prevent coagulation of the blood. The distilled water is then added, drop by drop, from the pipette-stopper, until the tint of the diluted blood is the same as that of the standard. The amount of water added, i.e., the degree of dilution as indicated by the graduation, indicates the amount of hæmoglobin compared with that of the standard, and as this is a dilution of one hundred, the degrees of dilution employed to obtain the same tint represent the percentage proportion of the hæmoglobin to that of normal blood.

When the blood contains a considerable quantity of hæmoglobin, the tint of the dilution is the same as the standard for six or eight degrees of dilution. It is necessary in

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this case to note the point at which the dilution ceases to be darker than the standard; and to dilute until it is distinctly paler; the mean between these two points is the degree required.

The tint may be best observed by transmitted light, the tubes being held between the eye and a window. Care must be taken that they are not held below the line of light, because, if the corpuscles are numerous in proportion to the hæmoglobin, they reflect so much light as to render the tint unduly pale. When the tubes are held in the line of light, the corpuscles do not interfere with the tint.

By ascertaining with the hæmocytometer the corpuscular richness of the blood, we are able to compare this with the amount of hæmoglobin, as Hayem and Malassez have done. A fraction, of which the numerator is the percentage of hæmoglobin, and the denominator the percentage of corpuscles, expresses the average value of each corpuscle. Thus the blood of a patient suffering from anæmia, contained sixty per cent. of corpuscles, and only thirty per cent. of hæmoglobin; hence the average value of each corpuscle was $\frac{30}{60}$ths, or $\frac{1}{2}$ of the normal. Variations in the amount of hæmoglobin may be recorded on the same chart as that employed for recording the number of corpuscles.

The apparatus is made by Hawksley, 300 Oxford Street.

XVI.—*A Case of Scleroderma.* By H. Radcliffe Crocker, M.D. *Read December* 13, 1878.

E. N., a girl, æt. 13 years (an inmate of an orphanage), was admitted to the East London Hospital for Children, on August 22, under Dr. Eustace Smith, to whom I am indebted for the opportunity of showing the case to the Society. Her history, as far as could be ascertained, is as follows:—Her mother died of phthisis; father alive and well. The patient had rheumatic fever four years ago, and has had occasional pains in the chest since.

Eighteen months ago she was an out-patient for enlarged cervical glands on the right side, which got well; but later, the glands on the left side were affected; these have since varied in size, but have steadily increased for four months previous to admission. No scleroderma was noticed in the Margate Infirmary, of which she was an inmate up to the begin-

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ning of August. On August 8 she complained of rheumatic pains in her arms, for which a liniment was rubbed in, and it was then noticed that the skin was hard; this condition spread over the body, nearly the whole of which was implicated by the time she came under notice a fortnight later. Eczema capitis had also existed for three weeks.

On admission, the whole face had a swollen appearance, especially under the lower jaw on the left side; enlarged glands were felt here, and extended round to the right side in a somewhat less degree. The expression was fixed, the skin pale, with slight mottling from dilated small vessels, and, to the touch, felt as firm and resisting as frozen fat, though there was no perceptible alteration of temperature. There was no pitting after very firm pressure. The same induration affected the whole body, except the eyelids and palms and soles of the feet. In the mouth there was induration of the mucous membrane of the right cheek, but not of the tongue or left cheek. Her mouth could be opened fairly well without pain, but the tongue was protruded with difficulty.

The induration was more marked at some parts than others. The flexor surfaces of the joints were most affected, and there was apparent shortening of the skin so that the limbs could not be extended completely. This was especially marked in the arms, and the forearms could not be extended much beyond a right angle, the attempt producing pain and bringing into prominence a thick band of indurated tissue stretching across the elbow-joint. Raising the arm gave pain in the axilla; the knees, however, could be straightened with slight force, but the body was a little bent forwards at the hip-joints. The abdominal walls were as rigid as they would be in tetanic spasm, most marked at the epigastrium. The skin could not be pinched up without great difficulty in any place, and in some parts not at all. No pigmentation was observed. The lungs were healthy.

The heart's apex was beating between the fifth and sixth ribs in the nipple-line. A systolic murmur was audible at the apex conducted towards the axilla, and there was friction at the base. The urine was normal. The temp. 101°; the pulse 116; resp. 20. Bowels confined.

Aug. 27.—The induration over the body was slightly diminished; the heart's impulse was at the fourth space ¼ in. outside nipple-line, and diffused over second, third, and fourth

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spaces, and the mitral systolic bruit was still heard. No increase of cardiac dulness.

Aug. 30.—The induration on the legs was less marked; the tongue could not be protruded beyond the lips.

Sept. 11.—For the last few days marked pitting had been observed on the face on pressure.

17.—The double friction was plainly audible, and the mitral systolic was also faintly audible at the base. There was more power of protruding the tongue. The eczema capitis was much worse.

27.—Pain in the right knee. Temp. 105°, and after sponging 103°. More expression in the face was noticed.

Oct. 8.—Much more expression. The epigastrium was less hard, and pericardial friction fainter. One of the caseous glands on the left side of the neck was suppurating.

11.—Temp. normal. Eczema capitis nearly well. Was allowed to get up.

23.—The patient, who had been losing weight to the amount of 3½ lbs. since admission, has been gaining since she was allowed to get up. The temperature has varied considerably since admission, being generally higher in the evening than in the morning, the extreme limits being 97° on September 15 and 105° on the 27th. The marked rises in temperature were associated with increased symptoms of pericarditis. From this date to November 27 the temperature fluctuated considerably, once reaching 104·5°. On November 9 the pericardial friction was increased during this high temperature, which was speedily reduced by cold sponging.

Nov. 27.—Temperature fallen to normal, and has varied but little since.

Dec. 12.—Stands with knees one-half bent, the body inclined forward, and head slightly stooped forwards.

Hair is scanty, skin thickly covered with pinkish stains, the remains of the eczema, and there is less swelling. Face pale, induration diminished, the upper halves of her ears have nearly regained their flexibility, but the lower halves are still hard. The lips and hands are much better, the fingers being quite restored. More mobility below the third rib. Epigastrium and abdomen are now soft. The dorsum of the foot has also improved.

She is just recovering from a fresh attack of pericarditis, and there is still friction to be heard at the base as well as the mitral regurgitant murmur.

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Remarks.—In this case the most noticeable features are the rapid onset of the scleroderma, so that in less than a fortnight it had reached its acme; the almost universal diffusion of the induration, the previous acute rheumatism and valvular disease, with the repeated attacks of pericarditis throughout its course; the high temperature at various times associated with the pericarditis; the occurrence of œdema for a short time in the face; the absence of pigmentation, and the concomitant eczema.

These cases are somewhat rare, but their peculiarities and striking character always attract attention, and over 100 instances are now recorded, though the correctness of the diagnosis in some of them is open to doubt. Of the numerous writings on the subject, since M. Thirial's in 1845, there may be especially mentioned—Dr. Hilton Fagge's article in Guy's Hospital Reports for 1867, in which he argues in favour of the identity of Addison's keloid and scleroderma, and that of Dr. Van Harlingen, in the 'American Journal of Dermatology' for 1873, who besides giving an able *résumé* of the subject, appends the bibliography of the disease up to that period, while Kaposi and Neumann give good accounts of the histology. Although there are variations in the symptoms of the numerous cases, they all possess in common—insidious commencement; induration and immobility of the skin widely diffused and most marked on flexor surfaces, crippling the movements of the joints; absence of fever, except from complications. Chronic course, symmetry, general thickening in the early stage, but no elevation above surrounding parts. Its non-fatality of itself and tendency either to improve or to undergo shrinking and produce atrophy of the subjacent parts by pressure, and the slight influence of treatment upon its course.

Other common but not invariable features are:—its predominance in the female sex, the proportion of females to males being nearly as 3:1; its occurrence in early and middle life, commencing with rheumatic pains; the frequent association of a history of acute rheumatism either some time before, immediately preceding, or even accompanying the scleroderma; the cardiac disease sometimes dependent, sometimes independent of the rheumatism; pigmentation, especially near the sebaceous follicles, which may precede or follow the induration; the backs of the neck and forearm being usually the first parts attacked, and the absence

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of œdema except in the hands and feet, and the occurrence of ivory-like patches.

The histology, as described from observations on skin removed both from living and dead subjects, is: In the epidermis, the cells of the rete Malpighii are, according to Neumann, increased in number, and form conical projections into the cutis. The cells of the lower layer are frequently pigmented. In the corium the connective elastic tissues are much increased, and there are large bundles of involuntary muscular fibre. The subcutaneous layer is deprived of fat, and often resembles corium, from the increased fibrous tissue. Groups of cells are always found in the deeper layers of the cutis and in the fatty tissue. Neumann also describes these cell-groups as occurring in especial abundance around the sweat glands; the latter, with their ducts, are enlarged, and the cells in them increased in number; while he states that the vessels of the papillary layer are atrophied.

The prognosis, as far as life is concerned, is good, and all the induration may sometimes wholly disappear; more often it clears up in some parts and not in others; it is stated by some authors that while we may hope for improvement during the swollen stages, no alleviation can be looked for when the new tissue has undergone contraction. This is not absolutely true. Two years ago a case of this disease, of four years' duration, in a woman aged 38, was admitted into University College Hospital, under Dr. Tilbury Fox. There was marked contraction of the skin with atrophy of the parts beneath, and the fingers were flexed in a claw-like manner, and immovable; the elbow joints were fixed, and the skin of the face was quite rigid, thin, and tightly stretched over the bones. Diligent inunctions of oil were employed with tonics. She is now an out-patient with eczema genitalium. I saw her a week ago, and there was great diminution in the induration in all parts, and increased mobility of the skin; she can walk, move her lips and features, and straighten her knees, and though her fingers are still claw-like, and the little finger quite bent up, she can move them much better, and for the last three months has been able to dress herself. I may remark that she has mitral stenosis, with no history of acute rheumatism.

On March 14, E. N. was shown again to the Society, the induration having disappeared from all parts except the

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face, and even here there was improvement. At the beginning of June it was scarcely perceptible, the general health was much improved, and only the mitral systolic murmur was audible.

XVII.—*Case of Urticaria Pigmentosa.* By Thomas Barlow, M.D. *Read December* 13, 1878.

FREDERICK P., æt. 8 months, was brought to the out-patient department of the Children's Hospital, Great Ormond Street, on October 17, 1878, for a rash on his skin. Its characters were as follows:—

Over the trunk were situated numerous brownish-drab rounded areas, some the size of the end of a cedar-pencil. In many places the areas became confluent, and over the back there was more diseased than sound skin. These areas were slightly raised, and finely granular on the surface. Similar patches were situated on the thighs and arms, neck and temples, just where the hair began, and indeed extending a little way on to the hairy scalp. But in these regions the elevation was not so decided as on the trunk.

Besides these lesions there was one wheal to be seen on the trunk, and a broad wheal band was readily brought out by scratching.

The boy was ready to scratch his trunk directly it was exposed. There were no glandular swellings. He was a bright active child, with no sign of visceral disease. He had been suckled, and although he had had food in addition he was scarcely at all rickety. He was said to suffer only from constipation. So far as I could judge, syphilis could be absolutely negatived. The mother was a healthy-looking woman, and she said her husband was also healthy. They were not related, and neither of them had suffered from any skin disease. There had been a girl born before this child; she was 2 years old, and had not suffered from skin disease or other disorder according to the mother's statement. This child was a full-time baby. The mother denied his ever having had jaundice. At 9 weeks old, she says, about a dozen spots came out on the chest, belly, and back, and on both upper arms. Some of the spots 'were like large blisters red all round.' 'They never formed matter.' He scratched himself after the spots came. Gradually he became covered, over the regions described, with the brownish spots now present.

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From time to time he had 'white blister-like spots' appear (? wheals), and he was always fond of scratching himself. The mother had never seen any flea upon him.

At Dr. Gee's suggestion, I directed the mother to mop the boy's skin twice daily with spirits of camphor, and to apply some powdered camphor also. She was quite positive the child had less irritability, and I believe the areas of altered skin are paler than they were, and some of them more finely stippled on the surface than they were. Occasionally a wheal has been seen, and it is always easy to produce a band of hyperæmia by a scratch, and this band often shows a wheal-like line along its centre.

Remarks.—This is an example of a disease, several reports of which now exist in the Memoirs of this Society. The cases are recorded under the following titles:—

(1) A Rare Form of Skin Disease. By Mr. Morrant Baker. Vol. viii. 1875.

Report on Microscopic Appearances of the Skin in the above case. By Dr. Thin. Vol. x. 1877.

(2) Xanthelasmoidea. By Dr. Tilbury Fox. Vol. viii. 1875.

(3) Case of Undescribed Eruption in a Tuberculous Child. By Dr. Barlow. Vol. x. 1877.

(4) Anomalous Mottled Rash. 'Urticaria pigmentosa (?)' By Dr. Sangster. Vol. xi. 1878.

In the five cases under consideration, the disease began at periods varying from six weeks to three months. In all of them there was a patchy pigmentation, varying in colour from dull red to buff. Under observation, there was not much change in the pigmentation, except that some of the patches faded a little.

In four out of the five the trunk was more affected than any other part of the body. In all of them pruritus was a marked feature.

In four out of the five, wheals and factitious urticaria were noted.

In none of these cases had there been any jaundice.

There is no reason to associate any diathetic condition with the skin lesion.

Mr. Baker's case died of empyema. My first case is certainly a scrofulous child, and has had scrofulous ulceration of the skin, but none of these pigmented areas have shown any tendency to ulcerate.

It appears to me that the term suggested by Dr. Sang-

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ster sufficiently marks out the affinities of the disease, and that 'urticaria pigmentosa' may be provisionally adopted as the name of this skin lesion.

XVIII.—*A Case of Intestinal Obstruction for which Gastro-Enterotomy was performed.* By Wm. Cayley, M.D., and George Lawson. *Read January* 10, 1879.

Wm. H. C., æt. 23, a compositor, of temperate habits, was admitted into the Middlesex Hospital under the care of Dr. Cayley, on June 3, 1878.

About 12 years ago the patient was severely burned about the face and neck; he was treated in the Middlesex Hospital, where he remained for about six months; with this exception he had enjoyed good health, and had never suffered from colic or any form of lead poisoning. About 18 months before his present attack, while straining at a printing press, he felt something give way, he said, in his belly. He turned faint and vomited, but soon recovered and experienced no ill effects afterwards.

For the last six weeks he had been somewhat costive, and had suffered considerably from colicky pains. The bowels acted every day, but the motions were scanty and composed of small hard lumps. On May 29, while at work, he was seized by an attack of colicky pain much more severe than the previous ones. He continued at his work, but had to sit down several times. In the evening he vomited repeatedly, and he stated that the matters brought up had a fæcal smell; the bowels had acted that morning, but there was no motion afterwards up to the time of his admission. During the following three days he had frequent retching, but brought nothing up, and he took no food, except a little milk. The colicky pains continued unabated. His medical attendant administered sulphate of magnesia, and also gave him several enemata, but no mercury or opium.

State on Admission.—Patient of middle height, spare conformation, fair muscular development. The mouth, chin, and front and sides of the neck were occupied by the cicatrix of a burn; both hands also were much scarred from the same cause. The countenance was natural and free from anxiety. The tongue was thickly coated. There was a slight blue line on the gums of the lower jaw. He complained of a

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twisting pain in the belly, especially on moving. It was most marked in the umbilical region, and though constant was aggravated by frequently recurring paroxysmal exacerbations. The abdomen was considerably distended, with some tenderness on deep pressure in the umbilical region, but not elsewhere. There was marked fulness in the epigastric region, below which there was a slight depression, apparently corresponding to the lowest linea transversa of the recti muscles. On percussion there was tympanitic resonance in the epigastric, right hypochondriac, lumbar, and iliac regions; in the umbilical region the resonance was less markedly tympanitic, but again became more so in the hypogastric region; on the left side there was dulness in the iliac and lumbar regions, but it was noticed that the position of this dulness was not constant, and that it sometimes shifted across to the right side. The circumference of the abdomen at the umbilicus was 33 inches, midway between the umbilicus and xyphoid cartilage 33½ inches. The patient belched up much wind, but had passed none per anum since the 29th. The urine was abundant, sp. gr. 1037, free from albumen. Pulse 108; respiration 24; temp. 99·2°.

The patient was placed on his elbows and knees. A flexible tube was passed as high as practicable, and an enema of warm water administered by a syphon from a vessel placed 18 inches above the level of the anus. It was not found possible to introduce more than 2 quarts of fluid, which caused the patient considerable distress from a feeling of distension. The enema returned quite free from fæcal matter. He was then placed on his back and another enema given in a similar manner, the flow of water into the bowel through the syphon tube being kept up for about half an hour, the amount retained at one time not exceeding 2 quarts as before. On auscultation during the injection it was believed that the gurgling of the water could be heard as far as the cæcum. But this observation was perhaps subject to fallacy. Digital examination of the rectum gave negative results. The colicky pains were for a time much relieved, but in the afternoon they again became severe, and he was ordered half a grain of extract of opium every 4 hours. In the evening another enema was administered which returned unaltered. After taking 2 pills the pain was much relieved and he fell asleep. They were, therefore, discontinued.

June 4.—Pulse 100, temp. 98·8°; patient passed a good night, and has had no vomiting. Pain much abated. Passed

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10 ounces of urine during the night, but no motion or flatus. The distension of the belly has increased. Circumference at umbilicus, 33½ inches; midway between umbilicus and xyphoid cartilage, 34 inches. The belly is now everywhere tympanitic, except in the flanks and above Poupart's ligament on the left side. An enema of water, given as before, returned unaltered. The patient took some milk and beef tea during the day, and had no vomiting, but towards evening the pain round the umbilicus became very severe. His pulse was now 99; temp. 99·4°. He was ordered a grain of extract of opium and hot fomentations to the belly.

5.—Pulse 104, temp. 99·2°. Pain much relieved. At 6 o'clock this morning he vomited about 3 ounces of flaky yellow fluid, with a distinct fæcal smell; he thought that he passed a little flatus per anum. Has passed a pint of urine in the 24 hours, sp. gr. 1037, with a distinct reaction of indican. Mr. Lawson examined the patient per rectum; he could feel a hard mass in front of the rectum, and a small particle of fæcal matter was brought away by the finger nail. He recommended that an enema of olive oil should be given. This was administered as before by means of the syphon apparatus from a height of two feet, and the flow was kept up for about 40 minutes. Not more than a quart could be retained at a time; it returned unaltered. During its administration he complained of severe pain at a point midway between the umbilicus and the centre of Poupart's ligament on the right side. In the evening his temperature went up to 101·2°. During the day he again vomited flaky yellow fluid, with a fæcal smell.

6.—Pulse 96, temp. 99·6°; tongue rather dry. Distension of belly increased. Circumference at umbilicus, 34½ inches; above, 35 inches. Slight fluctuation was now perceptible over the lower part of belly, and there was a little tenderness. Patient continued to vomit at intervals matters with a fæcal smell, but he showed few signs of distress, and was amusing himself by reading a magazine.

It was now apparent from the nocturnal rise in temperature, the slight tenderness, and the commencing fluctuation, that peritonitis was beginning to develop, and therefore any delay in resorting to an operation to relieve the patient was no longer justifiable.

Accordingly at about 2 P.M., the patient was taken into the operating theatre, and having been placed under the influence of ether, Mr. Lawson made an incision in the mesian

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line, about 3 inches in length, commencing just below the umbilicus. On opening the abdominal cavity, a quantity of serous fluid escaped, and the coils of intestine were seen greatly distended and congested, having a red, velvety appearance, but still shining and without any deposit of lymph upon them. The incision was then enlarged upwards and downwards, and on introducing the hand into the abdomen Mr. Lawson felt a portion of the intestine tensely distended to a size beyond that of the stomach; it extended from just below the liver on the right downwards to the right iliac, and across the belly to the left iliac region. From the fixity of this portion of the intestine he considered it to be the cæcum. He failed to detect any band or constriction, or any collapsed portion of bowel.

He now endeavoured to unravel the small intestine, by withdrawing it and replacing it through the wound, coil by coil, but this proceeding was found impracticable in consequence of the excessive distension of the gut. A considerable portion of the small intestine was consequently withdrawn from the abdomen, to give room for further exploration, and on again introducing the hand nothing could be detected but the immensely distended part of intestine which was taken to be the cæcum.

This was now punctured with a large trocar, close to the lower end of the wound in the abdominal wall, and a chamber vessel full of liquid fæces was drawn off. The canula was now withdrawn, and a piece of india-rubber tubing about 6 inches in length, of the calibre of the finger, was introduced through the opening made by the trocar, and the end of the tube was brought out through the bottom of the wound in the integuments. A single suture was applied to one edge of the opening in the intestine, and fastened to the lower cut edge of the abdominal wall, but owing to the fixity of the viscus which had been punctured it was found impossible to draw it sufficiently forwards to unite it completely to the edge of the external wound. The intestines were then returned with some difficulty, and the wound closed with sutures in the usual manner, and a slight compress with carbolic oil placed over it. A layer of cotton wool was laid over the abdomen, and a flannel bandage carefully but lightly applied to keep the whole *in situ*.

During the progress of the operation, as the intestines were withdrawn from the abdominal cavity, they were covered with flannel made moist and warm by being wrung out of

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hot water. This flannel happened to be quite new, and consequently the fluff from it adhered to the peritoneal surface and remained attached when the bowels were replaced in the abdomen.

The small intestines, as before stated, were greatly distended, so as to approach in size the normal colon, and their surface was red and velvety. In returning the intestine into the abdomen, the peritoneal coat cracked in two places to the extent of about three-quarters of an inch; each of these peritoneal rents Mr. Lawson closed with a continuous suture of fine silk, such as is used in operations on the eye, taking care that the needle perforated only the peritoneal covering and did not wound the muscular coat of the bowel.

The patient was then removed to his bed, and ordered a grain of extract of opium every 4 hours.

He passed a quiet night, suffered scarcely any pain, but was very prostrate, and vomited several times, but the matters vomited were no longer fæcal. This vomiting was probably due to the anæsthetic; a profuse discharge of liquid fæces continued to take place through the tube. The next morning his pulse was 160, small and sharp. Temperature 103°. In the evening his pulse was 144; temp. 99°. He continued very prostrate, and said he felt as if he were dying.

June 8.—Pulse 144, very weak and compressible; temp. 99·2°. Countenance sunken, tongue rather dry, breathing entirely thoracic, belly much distended. Has had no more vomiting, and has passed some flatus per anum; complains of difficulty in swallowing. A free discharge of fæces continues through the tube.

9.—Passed a fair night, and feels less exhausted, pulse of better quality, swallows with less difficulty, tongue moister, and countenance less sunken; continues to pass flatus per anum. No vomiting.

10.—Continues to improve, but is much distressed by flatulence and eructations; temp. 99°. No feeling of sickness.

11.—Pulse 120, temp. 98°. To-day he passed a copious semi-fluid motion per anum. The discharge through the tube much diminished.

He now continued steadily to improve; on June 13, the abdominal distension having subsided, a rounded, rather doughy mass was perceptible in the left iliac fossa, which was not at all tender or painful; percussion over it was dull. Two sutures were removed to-day, three having been taken out on the 11th. The wound above the drainage tube gaped

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a little. The following day the tube was removed, but liquid fæces continued to escape through the wound in considerable quantity; there was, however, also a daily motion by the natural passage. On the 20th he passed for the first time a solid motion per anum. The wound granulated and healed up gradually with the exception of a small fistula which remained permanent, and continued to discharge small quantities of liquid fæces. The bowels were opened every day, but to effect this frequent enemata were required. He gradually recovered strength, and in August was able to leave his bed, and towards the end of the month could walk about, a pad and belt having been fitted to the fistula, which now only allowed an occasional oozing of fæcal matter. The hard mass which was perceptible in the right iliac region remained without any material alteration, and on examination per rectum it could be distinctly felt through the intestinal wall near the brim of the pelvis.

On Oct. 9 he was sent to the convalescent hospital at Eastbourne. There was still a minute fistula through which slight oozing of fæces took place occasionally, and the hard mass in the left iliac region was still present, though somewhat reduced in size.

On Nov. 4 the patient was sent back from Eastbourne to the Middlesex Hospital. He stated that 3 days after his arrival at Eastbourne he had an attack of abdominal pain of a paroxysmal character, which daily increased in severity, and the diurnal evacuation of the bowels became scanty and difficult, and 3 days before his departure the fistula reopened. Accordingly the medical superintendent at Eastbourne sent him back to the Middlesex Hospital.

On his readmission there was great distension of the belly, considerable pain of a colicky character, inability to take food, with loss of flesh and strength; the mass in the left iliac region was somewhat increased in size.

5.—Ordered a small enema of ol. oliv. ℥ii. decoct. hordei ℥vi., to be followed in two hours by another of ol. oliv. ℥iv. decoct. hordei oj. The enema produced a scanty evacuation of fæcal matter. The injection was repeated on the 13th, and on the following day the bowels acted freely by the natural passage. He was now again restored to comparative comfort, and was able to get up and walk about the ward. And the mass in the left iliac region seemed again somewhat diminished in size.

22.—The patient was again troubled with consti-

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pation and distension of the abdomen accompanied by vomiting of a greenish yellow fluid, and was unable to take food. He was ordered an enema composed of mag. sulph. ʒiv., pil. coloc. co. gr. xv. ext. bellad. gr. i. dec. hord. Oiss. This again gave relief, some flatus was expelled through the fistula, and fæcal matter per anum.

These constantly-recurring attacks of constipation with distension and much suffering will probably render a right colotomy necessary. The bowels seem to have lost much of their propelling power, and as they have probably become more or less adherent to the abdominal walls and to each other, a complete block may at any time occur, which the operation of opening the colon in the right loin would probably afford the best prospect of relieving.

Remarks.—The exact seat and nature of the obstruction remain uncertain. It was doubtless situated below the cæcum, possibly near the sigmoid flexure, though the fact that an enema of 2 quarts of water was retained would perhaps indicate that the obstruction was higher up. In all probability, however, a right or even a left colotomy would have given the necessary relief. The success of the operation in the present case may, we think, be ascribed to the fact that it was performed early, before any severe constitutional symptoms had shown themselves, and not deferred, as is so often the case, to the last period of the disease, when collapse is imminent. This patient, moreover, had in his favour youth, temperance, a sound constitution, and a remarkably calm and stable nervous system, which resisted the effects of severe irritation and shock.

The cause of the obstruction was probably some twist or kink of the bowel; the hard mass which afterwards became perceptible in the left iliac region may possibly be some inflammatory deposit; it can hardly be a collection of fæces, as it continued after free action of the bowels had taken place; and as it diminished somewhat in size it is not likely to be a tumour.

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XIX.—*Case of Pleuritic Effusion, in which the Side was gradually drained by a fine canula.* By R. SOUTHEY, M.D. *Read January* 24, 1879.

THOS. WILLIAMS, a carman, æt. 23 years, a moderately well nourished, fair-complexioned man, of average height, well built, was admitted into St. Bartholomew's Hospital under my care with the ordinary symptoms and physical signs of pleurisy with effusion upon the left side, on September 12, 1878. He dated his illness back to September 3, when he thought he caught cold; had rigors and headache, was seized with pain on both sides, and had some slight cough, but he had managed to keep at his employment until September 11; and although he complained of his chest and some shortness of breath, he walked upstairs into the ward.

He had not slept well since the commencement of his illness on account of the pain on his left side.

State on Admission.—Temp. 102·2° F.; resp. 24; pulse 80, and of rather high tension; no cyanosis; cough inconsiderable, but aggravating his pain much; no expectoration; decubitus not embarrassed; can lie on back or either side; tongue moist and nearly clean; bowels open; appetite bad; thirsty; urine high coloured and scanty, sp. gr. 1025, acid, no albumen.

Thorax.—Full movement of right side; left respiratory movements impaired; absolute dulness over left lung in front, in lateral region, and behind as high as root of lung in interscapular region; semi-resonance in left supraclavicular and suprascapular region; vocal vibration on left side absent in front and side, very defective behind; ægophony at root of left lung; absence of respiratory sounds in front and at left side, and generally over left lung as compared with right, where the breathing is full and compensative; distant tubular breathing at apex and left suprascapular region.

Heart.—Impulse only to be felt in epigastrium; no apex beat in normal situation; action regular, sounds clear, in usual precordial region.

Abdomen naturally full; nothing noticed abnormal about other viscera.

Evening temp. 102·4°.

Ordered milk diet, sago, beef-tea, pudding;

And Hst. sodæ tart. eff. cum. pot. nit. gr. x., tr. digit. ♏ x. Hst. morphiæ gr. $\frac{1}{6}$ nocte si opus sit.

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Course and Progress.

Sept. 14.—Nights restless; frequent dry cough on shifting position; takes food fairly; tongue is clean, but inclined to dry; bowels open; urine scarcely averages 20 ounces per diem.

Morning temp. 102·2°; evening 102·5°. Resp. 28; pulse 92.

Physical Signs.—The dulness over left side extended higher up posteriorly; complete dulness in left supra-clavicular space; ægophony still at left root.

On Sept. 15, at 10 A.M., I introduced a fine canula into the left pleural cavity, in the fifth intercostal space in the mid-axillary perpendicular. Clear serous fluid poured out in a free jet. A capillary tube was attached, and the drainage conducted into a jar beneath the bed. The lad fainted directly the tube was put in; he was rather frightened by the preliminaries.

Four pints of pleuritic fluid, sp. gr. 1020, oozed away, two and a half pints in the first four and a half hours, the rest more slowly and gradually; on Sept. 16, 28 hours after its introduction, I removed the canula, greatly to his relief, for he was afraid of lying upon his side, and said it hurt him.

The left side still remained generally dull, but less so in front, above, anteriorly, and in the suprascapular region; there was a loud friction rub with each respiratory act, both in the mammary region and in the left scapular region just below the spine. Further, coarse bronchial breathing was audible in the left axilla, below the left mamma, and behind at the root of the left lung.

I specify these facts, for, after tapping a good many chests with aspirators and ordinary small canulas, I never remember hearing such complete evidence of lung-expansion as was furnished in this case by a friction rub, both in front and behind.

On the night he was tapped he had a morphia draught, and slept several hours; and in the twenty-four hours after he passed 2⅓ pints of urine, sp. gr. 1019.

On the 18th he passed 2½ pints of urine, sp. gr. 1021; no albumen. Temp. 102·2°; resp. 24; pulse 68.

On Sept. 19 the heart's impulse could be recognised beating faintly in the natural position; he felt quite well, he said. Passed 5¾ pints of urine, sp. gr. 1022.

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There was good resonance on percussion to second rib in mammary perpendicular line; still complete dulness in axilla; fair resonance in left suprascapular and interscapular regions; complete dulness at base behind.

Sept. 20.—To continue saline with digitalis; but, since appetite had improved, I ordered full meat diet, extra milk and pudding, and 4 oz. of wine. It is unnecessary to enter into further details, but I will record the principal clinical facts observed briefly.

20.—Temp., morning 102°, evening 103°; resp. 24; pulse 64; urine 45 ounces.

21.—Temp. 101·6°; resp. 22; pulse 60; urine 60 ounces.

22.—Temp., morning 100·8°, evening 102·4°; pulse 60; urine 65 ounces.

23.—Temp., evening 102°.

24.—Temp. 101·6°; resp. 24; pulse 72; urine 60 ounces, sp. gr. 1014.

25.—Temp., morning 99·4°, evening 100·8°; pulse 52; urine 75 ounces, sp. gr. 1012.

26.—Temp. 101°; pulse 54; urine 75 ounces.

27.—Temp. 100·4°; pulse 54; urine 60 ounces, sp. gr. 1012.

28.—Temp. 100·3°; pulse 57; urine 60 ounces.

29.—Temp., morning 98·9°, evening 99·2°; urine 65 ounces.

30.—Temp., morning 98·4°, evening 99·6°; urine 55 ounces, sp. gr. 1012.

30.—Appetite good. No night sweats. No cough; feels quite well. Vocal vibrations to be felt over base of left lung in front; still dull and the vibrations impaired behind.

Respiratory murmur much improved in front; quite good to lower border of third rib in mammary line behind; bronchial breathing over left scapular region; no respiratory sounds lower down.

Loud friction sound over left mammary and lateral regions; quite dull from fourth rib in mammary perpendicular line, and also from fourth rib in axillary perpendicular.

Between 1st and 16th October patient's progress was uniformly good; a cyrtometrical tracing of his chest, taken on October 7, showed that the left side had slightly fallen in at its lower and lateral one-third in the situation that the chest wall does always sink in to meet the lung, in my experience, in favourably ending cases.

The highest evening temperature recorded was 100·8° on

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October 7. The mean average urinary excretion was 60 ounces per diem; sp. gr. 1020.

On October 17 I examined his chest before his discharge, for he wished to return to his work.

The left shoulder slightly drooped.

Movements on left side, nearly nil in lateral region.

Percussion note good to fourth rib in mammary perpendicular and in mid-axillary perpendicular.

Semi-resonant between fourth and fifth ribs in axilla; dull from below fifth rib.

Resonance to angle of left scapula.

Dulness over a hand's breadth at base of left lung.

Rough leathery friction sound still audible in left supra-scapular and interscapular regions; in left axilla, left lateral, and left inframammary regions; heart sounds normal; apex beat, between fifth and sixth ribs, half an inch inside left nipple.

Remarks.—The case illustrates the favourable termination of an extensive pleuritic effusion, treated by gradual drainage at the stage when the side was fullest of fluid, and the pressure consequently upon the whole circulation not inconsiderable.

The last drops of fluid evacuated by the capillary tube were as free from red blood corpuscles as the first.

The side was not emptied, but the pressure relieved. Four pints were thus removed at a minimum of pain, risk, and inconvenience, and at once, within 24 hours, the renal secretion became more than doubled; after 48 hours, the man passed 115 ounces instead of less than 20.

I have already tapped the chest five times in this way, and once drew off nearly 20 ounces of purulent fluid. I have had no complication or accident that I could attribute to the proceeding, and I can commend its adoption to my medical brethren in the hydrothorax of scarlatinal dropsy as a perfectly safe and easily performed operative measure, as well as in any pleuritic effusion, where the temperature abides high and the urine becomes progressively scantier day by day.

I thought it might be interesting to some of the members of the Society to see the last and best form of what I call a fine drainage trochar and canula, suitable for various purposes, as an exploring trochar for paracentesis abdominis or thoracis, and equally adapted for draining anasarcous legs.

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The desideratum was a trochar with a needle that would adapt itself to different lengths of canula, and for this purpose the old crochet needle screwholder appeared well suited.

The instrument may be adapted to hold two sets or sizes of trochars or canulas.

The hour-glass constructed bulb end of the canula unscrews for a shield to fix on, and the shield, strapped on the abdominal or thoracic walls, holds the drainage canula *in situ*, but allows play enough for the movements of the muscles of respiration.

Thus really neither tightly nor painfully fixed the tube suffers drainage to go on gradually, and large serous cavities are emptied of their contents by a suction no stronger than capillary attraction, neither suddenly nor violently.

So far as paracentesis abdominis is concerned, I can only add that for the last year or eighteen months I have employed no other method, that I have thus tapped, or directed to have tapped, some 20 or 30 cases, I should think, and that in no single instance have I seen any reason to desire any other mode of tapping. It is a nearly painless operative proceeding, and affords all the palliation without the risks involved in paracentesis with larger instruments, and when more widely known it will, I think, be universally preferred to the old-fashioned practice.

XX. — *Case of Spasmodic Torticollis.* By Julius Althaus, M.D. *Read January* 24, 1879.

A MARRIED lady, æt. 53, and mother of five children, consulted me in April last for a spasmodic affection of the muscles of the neck, from which she had suffered for about five months. Up to that time she had been generally healthy. She had apparently not inherited the neurotic constitution from her parents, and her circumstances in life had been easy and comfortable. She had lost the catamenia about seven years ago without any trouble, and she was not aware of any cause which could have given rise to the affection from which she now suffered except that she had, for some months previous to the outbreak of the complaint, experienced considerable anxiety on account of one of her sons, who had during that time shown somewhat alarming signs of moral and mental eccentricity.

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The facial expression of the patient was anxious and careworn. On examining her head and neck it appeared that there was incessant clonic or intermittent spasm in the muscles supplied by the left spinal accessory nerve, viz., the sterno-cleido-mastoid and the trapezius muscles. The patient was unable to keep her head still, even for a single instant; no effort of the will had the slightest influence in arresting its movements. On the contrary, when she tried hard to keep the head steady, the cramp became rather intensified. The jactitation was more pronounced in the sterno-cleido-mastoid than in the trapezius, as shown by more or less constant nodding of the head on the left side, the ear being approached to the collar-bone and the occiput depressed, while the chin was turned over to the opposite side and elevated. The cramp in the trapezius was shown by the head being occasionally more pulled backwards and to the side, while the top of the shoulder was raised, and the shoulder-blade approached to the spine. All this time the muscles could be seen and felt as hard projecting lumps under the skin and fascia, pulling away at the devoted head with an unintelligent and merciless force that checkmated without the slightest trouble any feeble inhibitory efforts arriving in them from their regulating centres. What I saw here appeared like the image of mad runaway horses dragging a slightly-built carriage onwards in their headlong course, with reins snatched away from the powerless hands of the terrified coachman. When the spasm was at its worst the entire mass of both muscles was simultaneously thrown into the wildest agitation, and the head assumed all kinds of odd attitudes, which varied from time to time as some portions of contractile tissue became more violently agitated than others, and the left arm would then to a considerable extent participate in the jactitation.

There never was any muscular rest except during sleep; and the patient had great difficulty in obtaining this, on account of the head being agitated even in bed, so that she was unable to find a comfortable position. On awaking in the morning the head kept steady for a few seconds; but as soon as the poor lady shifted her position, the muscular craze was at once fully re-established, and became particularly bad while she dressed herself. Eating, speaking, sitting up and walking, any feeble excitement, such as the presence of strangers, or even an animated conversation in the family circle, increased the severity of the paroxysms; and as during

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the entire day the patient had not a single minute's respite from the torments of her muscular tyrants, she was by sheer excess of rough muscular work exhausted without doing anything, and had not really known a moment's comfort since the disease had become fully established.

The affected muscles, although constantly exercised, were not in a state of hypertrophy, and felt, during the occasional intervals of relaxation, much the same as their fellows on the opposite side. There was no difference of temperature between the right and left side of the neck. No anæsthesia or hyperæsthesia of the skin could be discovered anywhere; nor had pressure on any part of the affected nerve or muscles any power of stilling the spasm. The patient complained, however, of a dull, deep-seated and wearying pain at the left side of the neck, which sometimes became exceedingly keen. This was evidently owing to intense muscular fatigue, and was found to be proportionate in degree to the severity of the spasms for the time being. There were no further symptoms which could be traced to the affection of the nerve of Willis.

All the other cerebral nerves were in their normal condition; nor were there any other morbid signs except such as might be looked upon as the direct consequence of the local disease. The erect or sitting posture being extremely uncomfortable, the patient instinctively avoided it, and spent the day lying on the sofa. She hardly dared to go out, shunned company, left her household duties to others; and from having been active, energetic, and full of life and spirits, she became timid, and was, as it were, forced into invalid habits, and a low, desponding tone of mind. Her digestion became impaired, and the action of the bowels sluggish.

I treated the patient with the constant galvanic current, applying the anode to the external branch of the spinal accessory nerve behind the sterno-cleido-mastoid muscle, and the cathode to the cervical spine. This was done about three times a week, and generally gave immediate relief from the painful sensations previously described; but remained without influence upon the severity of the spasm. I also prescribed a mixture of chloroform and belladonna liniment to be applied externally over the suffering parts, and ordered an aperient mineral water for regulating the action of the bowels. After a month of this treatment no decided change was perceptible, and she was then put on bromide of potassium, to which after a time full doses of cannabis indica

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were added. This medication having likewise failed to afford relief, I then bethought myself of the subcutaneous injection of arsenic, which is reputed to act beneficially in such conditions; and I injected on six different occasions between four and eight minims of the liquor arsenicalis, sometimes mixed with morphia, into the neck. This treatment seemed at first to promise well; the patient was for some time able to hold her head straighter, and the spasm left the shoulder altogether; but after a time she appeared as bad as ever. I then sought the advice of one of the great masters of our profession, who suggested large doses of the extract of belladonna with camphor; but on the second day of taking this prescription the patient experienced such violent symptoms of atropia poisoning that she was obliged to leave it off. She now despaired of ever getting better, and ceased attendance.

Remarks.—Clonic spasm limited to the spinal accessory nerve of one side is a rare affection. I have seen only seven cases of it. All these patients were over 40 years of age; four were men and three were women; and they attributed the complaint either to prolonged mental anxiety or to a sudden shock to the affections. Other observers have seen it coming on through the influence of cold and wet, after typhoid fever and the puerperal state, from disease of the cervical spine, such as periostitis, caries, tumour, &c., and injury to the head and neck. It also may occur, although clinically in a somewhat different form, in meningitis, tumour of the brain, and other diseases of the nervous centres. The idiopathic form of the disease, however, such as I have just described it, I believe to be unconnected with any structural disease. As far as I am aware there are no post-mortem records of such cases; and I doubt whether, if an autopsy were made, any coarse alterations would be discovered in the diseased parts. In this complaint, just as in the analogous affection of the portio dura, which is known as convulsive tic of the face, and which is much more frequent than spasmodic torticollis, the change in the nervous matter is probably molecular, and, as such, imperceptible to the naked eye as well as to the highest powers of the microscope. Nor do I think it feasible to start at present any definite theory as to the precise locality in the anatomical distribution of the nerve of Willis, which could be pronounced to be the seat of the disease. Is the affection located in the roots of the nerve in the lateral columns of the spinal cord? or is it

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where the nerve enters the cavity of the skull along with the vertebral artery? or where it joins the pneumo-gastric, near the jugular foramen? or after it has once more left the cranial cavity, and given off its internal branch to the vagus? To all these questions I find myself at the present time utterly unable to give an acceptable reply.

The complaint seems only exceptionally to end in recovery. I have seen improvement, and even temporary cessation of the spasm, but no permanent cure. The prognosis is therefore in a general way unfavourable. Occasionally the spasm seems to spread into other nervous areas, and may even lead to general epileptiform convulsions. More frequently, however, it remains localised in the nerve it selected in the first instance; and while destroying the patient's happiness and comfort, does not directly tend to shorten life.

Treatment appears to have only little influence on this affection. The nervine tonics, alteratives, and sedatives, such as zinc, arsenic, belladonna, opium, hydrocyanic acid, iodide and bromide of potassium, &c., are as a rule quite useless; nor have we to expect any but palliative influence from the local application of ointments, liniments, blisters, poultices, and baths of every description. Myotomy of the affected muscles, and excision of pieces of the nerve, have also produced only very temporary results, and are on general grounds not to be recommended. More is to be said in favour of the actual cautery, which Professor Busch, of Bonn, has recently used very thoroughly and energetically in four cases. Three of them are said to have been cured, while in a fourth there was no benefit. Seeing that good results have followed the operation of nerve-stretching for the relief of other spasmodic affections, such as tetanus, &c., I would suggest stretching of the spinal accessory nerve in any obstinate case of this complaint, in which the patient might be determined to seek relief.

In conclusion I will only say that the pathology of this disease is, of course, entirely distinct from that of permanent caput obstipum, torticollis, or wry-neck, in which there is persistent tonic contraction, chiefly of the sterno-cleido-mastoid muscle, causing the head to stand in a wrong direction, without any clonic convulsions being present. This latter affection has a better prognosis, as orthopædic and operative treatment has frequently proved successful.

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XXI.—*Rheumatoid Arthritis, regarded from a Clinical point of View.* By William M. Ord, M.D. *Read February* 14, 1879.

THE immediate object of the following communication is to put before the Society some opinions which I have been led to form regarding the etiology of the condition known in this country as rheumatoid arthritis. The grounds of these opinions lie in observations upon certain associations of rheumatoid arthritis in women; and I proceed without further delay to state and analyse these observations.

In a case which was under my care 10 years ago the association of severe arthritis with severe dysmenorrhœa was indicated so pointedly as to put it out of the class of coincidences. The affection of the joints, although persistent, was regularly developed paroxysmally immediately before, throughout, and for a short time after each menstruation, and as regularly remitted in the intervals. The first idea —that a common rheumatic inflammation affected joints and ovario-uterine organs—failed to account for the paroxysmal character of the arthritic attacks, and for their coincidence with menstruation. After much treatment had been ineffectually applied on the primary rheumatic hypothesis, the uterine conditions were carefully and steadily attacked for a twelvemonth. At the end of that time the dysmenorrhœa was overcome, and the rheumatic paroxysms soon after ceased to occur. The patient whose life had become a burden, who was wasted, sallow, anæmic, and hysterical, is now an active, happy, and decidedly well nourished member of society.

Haygarth, in his 'Clinical History of the Nodosity of the Joints' (1805), states that he had seen 33 cases of that condition, all in women. He regards the affection as peculiar to women, and as belonging to the climacteric and subsequent periods of their life. Only 3 out of his 33 cases had the 'nodes' during the period of regular menstruation. Of these two appeared to be between 30 and 40 years of age, the third had suffered twelve abortions. In all the fingers were chiefly affected. Haygarth separated this affection as 'nodosity of joints' from 'rheumatic gout,' a term already in use when he wrote; and he considered it to be chiefly a disease of the middle and higher classes.

Curiously enough, when I analyse my note-book I find

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records of just the same number of cases, not of nodosity of the joints simply, but of rheumatoid arthritis, combined with decided symptoms of uterine disorder or irritation. I exclude from the list cases in which there was evidence of uratic deposits, and cases in which no known uterine complication existed, though both classes must be discussed later on as forming chapters of the history of arthritis.

Of the 33, 26 belonged to the middle and upper classes, most to the former; the remaining 9 to the poorer classes; 17 were unmarried, 13 were married, 3 were widows.

As regards age—10 were between 20 and 30 years; 11 were between 30 and 40; 9 were between 40 and 50; and 3 were between 50 and 60.

The indications of ovario-uterine complications in the several cases were:—marked irregularity of catamenia in 2; catamenial flow simply in excess in 1; catamenial flow very scanty in 1; catamenia irregular with excess in 2; catamenia recently disappeared in 4; catamenia recently reappeared after apparent cessation, the reappearance coinciding with arthritic attack, in 2; dysmenorrhœa with excess in 8; dysmenorrhœa with deficiency in 4; constitutional symptoms of climacteric present in 2; fibroid of uterus with menorrhagia, but not dysmenorrhœa, in 1; catamenia regular, relieving pain present at other times in sacral region, in 1; catamenia excessive with leucorrhœa in 1; profuse leucorrhœa in woman married several years without pregnancy in 1; woman married several years without pregnancy in 1; case in which arthritis occurred on two occasions a week before parturition, these being the only pregnancies, 1; climacteric long passed, arthritis began then, and has since continued, 1.

In 4 of the above cases ovaritis existed; and it is important to notice, first, that amenorrhœa is not noted in any case; second, that the conditions are mainly such as would involve hyperæmia of the genital organs; third, that marked dysmenorrhœa is noted in 12, or more than $\frac{1}{3}$ of the total number.

The seat of arthritis was various. It affected the hands alone in 13 cases; the hands and wrists in 3; the hands, wrists, and elbows in 3; the upper extremities in 1; the right hand only in 1; the right hand and wrist in 1; the hands and feet in 1; the hands, feet, and knees in 1; the knees and ankles in 1; both extremities in 6; both extremities on one side in 1; ankle and tendo-achillis in 1.

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From this it appears that the hands were more often affected than any other parts; the metacarpo-phalangeal joints being of all joints the most obnoxious to this form of arthritis. The hands, besides being alone attacked in 14 cases, shared the affection with other joints, and principally with other joints of the upper extremity, the wrists especially, in all the rest of the cases except 2.

In 3 of the cases where the affection was limited to one side of the body, or, having begun, continued excessive on one side, there were ovarian pain and tenderness on the same side, and a distinct frequency of neuralgia on the same side.

An inspection of the cases brings out further most interesting relations. Not only did the arthritis coincide with ovario-uterine affection, but in a considerable proportion of the cases paroxysms of arthritis coincided with menstrual periods. This sort of parallel march was noted in 14 cases; in 1 of which arthritis preceded menstruation as its regular herald; in 7 arthritis regularly accompanied, in 2 it followed, in 2 it both accompanied and followed, and in 2 arthritis, occurring in the intervals, was relieved by menstruation.

Now if these had been so many cases of dysmenorrhœa the occurrence might perhaps have been accepted as an argument for believing the dysmenorrhœa to be a part of a general rheumatic process. But, though the conjunction is reported in 7, it is conspicuously absent in as many cases; and these are precisely the instances which do most to prove that the arthritis is a product of the uterine hyperæmia. With this simpler question we will deal for a moment, leaving the *modus operandi* to be discussed later on.

Among the 7 cases referred to as not accompanied by dysmenorrhœa is that of a lady now 52 years of age. She has had a large family, in all 12, and it is as much as five years ago that she began to suffer from arthritis. Before the arthritis troubled her she had begun to experience excessive menstrual loss. She consulted for this a distinguished gynæcologist, who found the uterus enormously engorged, but otherwise free from disease. The engorgement was lessened by treatment, but not by any means cured, and the menorrhagia went on. The arthritis first came in the form of sharp inflammation and swelling of the knuckles of both hands, rendering them completely useless. It began usually on the second or third day of the menstrual flow, and continued as long after its cessation. The periods

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becoming more frequent, and lasting longer as time went on, she became reduced to a very pitiable state. She was anæmic, exceedingly feeble, was crippled in hands, wrists, and knees, and lost her rest by reason of what she called 'fidgets'—uneasy but indefinable sensations in her limbs and abdomen, unaccompanied by pain or spasm.

Change of air and of scene, baths, tonics, alteratives, were all used in addition to local remedies, but no relief was obtained till, in the course of time, as she reached the age of 50 years, the periods began to be less frequent. At length intervals of 2 or 3 months occurred, and allowed her to gain strength, when she lost her arthritis and her fidgets, and appeared perfectly healthy. Of late the periods have been still further apart, but still, whenever the catamenia appear, she is once more crippled. The association of the arthritis with this painless menorrhagia began clearly at a time when she was weakened and drained of blood. The fidgets illustrate the irritability of the spinal cord related with imperfect nutrition, and the arthritis comes out as a resultant of two conditions, uterine irritation and spinal sensitiveness.

I have another and very similar case under observation. A lady, aged 51, the mother of six children, came to me recently with a gouty-looking inflammation in the elbows, wrists, hands, and knees. This had occurred a day after the return of the catamenia, previously absent for 12 months. She had no signs of gout in the shape of deposits, and her own expression was that she felt the attack to be really 'in the nerves.' The period was short, and the arthritis disappeared. But the catamenia having since returned with unusual freedom and duration on two occasions, she has each time had the arthritis severely enough to cripple her. The arthritis comes on at the end of the periods, the last of which was accompanied by abdominal pain, a circumstance hitherto unknown to her.

In a third case, an unmarried lady, aged 37, has a large uterine fibroid of some years' existence. She is anæmic, and being of an extremely sensitive disposition is much depressed and anxious. She has typical nodosity of the finger-joints, paroxysmally painful at the periods. The catamenial flow is excessive, but there is no dysmenorrhœa.

I will only relate one more case of my own before proceeding to quote from a few authors of importance. But this at more length.

E. S., aged 41, widow, was admitted into Alice Ward,

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St. Thomas's Hospital, under my care in September, 1877, having previously been under me as an out-patient.

Her family history was not unfavourable.

She was said to have had 'brain fever' and inflammation of the kidneys when a young woman. Ten years ago she had an attack of 'rheumatic fever,' since which she had never been free from pain in the joints.

The pain and stiffness had so increased of late that she had been obliged to give up her occupation of housekeeper, and seek admission.

When she was admitted all the joints of the limbs were swollen and painful. The metacarpo-phalangeal joints in particular were much enlarged, and the fingers bent on the palm; the ulnar side of the dorsum of the hands was much wasted. She said that all the joints cracked, and felt as though the bones were being rubbed together when she moved them. The knees, ankles, elbows, and shoulders were all swollen and mis-shapen, and she said that the hips were also painful on movement, although no swelling existed. The right arm was very stiff at the elbow. There were no uratic deposits to be found. There was no affection of the heart, and no change in the size of liver; the urine was normal; there was no fever; the catamenia had been absent for three months. She was not anæmic.

After admission she had occasional exacerbations of pain in different joints at different times, together with some rise of temperature, to 102·8° one evening, when the right shoulder was the seat of attack.

On the 11th October she had severe right facial neuralgia and sharp pain in the right wrist. Towards the end of the month she began to suffer from diarrhœa, and when this prevailed the joints were easier. She had now ovarian tenderness on both sides. On the 4th December she had pain across the sacral region and a continual desire to pass water, micturition being followed by burning pain in the urethra. There was no vaginal discharge. Her manner was excited and hysterical. On the 9th she complained of severe pain in the vertex, followed by vertigo and double vision, with slight internal strabismus more marked in the right eye. The next day she was delirious and noisy to violence, declared she could not see at all, and had still strabismus when at rest, though able to move the eyes freely if she pleased. The pupils were equal, were not dilated, and acted naturally; the optic discs appeared normal. There was no

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rise of temperature. The symptoms were soon fully declared as those of hysterical mania, and when this was developed the arthritis completely disappeared, leaving, of course, much swelling of the articular ends of the bones. Joints which had been stiff and exquisitely tender were now abnormally relaxed, and could be moved briskly without eliciting a sign of pain. It is to be remarked that otherwise there was no analgesia. The loss of substance at the articular surface was well seen in the looseness.

On the 18th of January the catamenia made their appearance. On the 22nd she was almost sane again, and fed herself naturally for the first time for nearly six weeks. She speedily improved in health, and on the 18th February the catamenia again appeared. After this she was perfectly rational. But on the 26th both ankles were swollen, painful, and tender, and the arthritis was gradually re-established. On April 3 the following note was made:—'Still has slight stiffness in right arm, especially in the shoulder; the little finger stiff, middle joint enlarged and a little painful; there is swelling of the right ankle, especially on the outer side; no redness, but pain, especially at night, and tenderness on pressure. Appetite good. Bowels regular. Sleeps well. No delirium or aberration. Does work, and makes herself very useful in the ward. Catamenia absent since February 18. For last 14 days has suffered from flushes of face, vertex headache, &c. Otherwise feels quite well.'

She was then discharged.

From the first I regarded this arthritis as of ovario-uterine provocation. When the ovarian tenderness appeared in November I treated her with ergot, indian hemp, and cold compresses over the lower abdomen. It was just as the arthritis began to relax that the mania broke out. When later the mania was fully developed, the arthritis as an active process ceased altogether, to return with the reappearance of the catamenia and with the return of sanity.

Upon these cases I will make such few remarks as the time permits.

There is, I would argue, good reason to recognise a relation of cause and effect between the uterine disorders and the arthritis. Upon the views of Todd, Fuller, and others, the cause should be a poisoning of the joints by a materies morbi generated in the uterine organs. The pathology of the present day favours rather the operation of nerve-influences in the production of rheumatoid arthritis. Remak, indeed, has

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proposed the name 'arthritis myelitica' as one more alias in addition to the numerous aliases under which that disease passes in various countries and cities.

It is certainly now generally acknowledged that spinal injuries and spinal diseases may result sometimes in muscular paralysis, sometimes in trophic changes, acute or chronic, of many parts and tissues, and particularly of the joints. Charcot has demonstrated an arthropathy having the character of rheumatoid arthritis, but with a greater amount of atrophy, as one of the phenomena of locomotor ataxy.

In the next place, it is acknowledged that paraplegia may be produced by urethral mischief, and the weight of opinion lies on the side of the belief that such urinary paraplegia is mostly of reflex causation.

Thirdly, an arthritis, identical in its morbid anatomy with rheumatoid arthritis, and well called by Ricord 'blennorrhagic arthritis,' is produced by gonorrhœa almost always in men, and by simple urethritis, also always in men, as has been shown by Elliotson, Brodie, and Fuller. This arthritis has been referred, chiefly by the earlier writers, to humoral changes, but by several later writers to nervous influence. Among these some have regarded the influence as a phenomenon of reflex action, others as a continuous extension of irritation from the urethra along sensory nerves to the spinal cord, ending in a myelitis.

Fourthly, the cases analysed appear to show that, whereas gonorrhœal rheumatism is an affection proper to men, women suffer in a parallel way, being affected with a definite form of arthritis when the uterus and accessory parts, mainly the homologues of the prostate and floor of the prostatic urethra of men, are the seat of hyperæmia.

The joint-affection undoubtedly occurs most often where conditions involving irritability of the spinal cord exist—in particular anæmia, nervous exhaustion, or general weakness, however caused. And it occurs chiefly at a period of life when the central nervous system is excessively irritable, that is to say, at or near the climacteric period. Inasmuch as the joint-affection in many cases ebbs and flows with the uterine affection, and may alternate with affections of the higher centres, I prefer the idea of its production by reflex action to the idea of its production by continuity of affection of nervous tissues.

Lastly, I may point out that the arthritis observed in spinal, in urethral, and in uterine affections is, as regards

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the local process, identical with traumatic arthritis, whether the result of direct injury to a joint or fracture of a neighbouring bone, and with a chronic arthritis sometimes following acute rheumatism; that, furthermore, the same local morbid process goes on in joints affected by morbid growths (as in cancer) or morbid deposits (as in gout).

Under these circumstances the propriety of the use of the adjective 'rheumatoid' is questionable. I venture to suggest that, while we may retain the term arthritis to denote the local condition present in all the groups of cases recognised, we may define its connotation by prefixing to it specific names indicative in each case of the group with which it is associated. 'Blennorrhagic arthritis' is a term of the kind already in use, and exactly illustrates my proposition.

XXII.—*A Case of Complete Obstruction of the Intestine by Fibrinous Exudation, with Latency of Acute Symptoms.* By E. MARKHAM SKERRITT, M.D. *Read February* 14, 1879.

A YOUNG man, æt. 19, previously in good health, felt slight pain across the abdomen on the morning of the 11th of last May; he took no special notice of this, and went out and lay on the damp grass. In the evening he was very sick. There were no rigors or other febrile symptoms. Next day he suffered from vomiting and diarrhœa; after this vomiting continued, but there was no action of the bowels, although for five days flatus was occasionally passed.

The patient was admitted into the Bristol General Hospital under my care a week after the onset of the attack. His aspect then indicated a moderate amount of distress and discomfort; in bed he lay in no special position. The skin was cool, the pulse 80, large, regular, and rather soft; on the dorsum of the tongue was a scanty moist white fur. The abdomen was moderately distended, and its walls were very tense from muscular contraction; there was a little pain about the umbilicus; there was very slight tenderness on deep pressure over the lower part of the abdomen. Otherwise palpation and percussion gave negative results. Bilious vomiting was frequent. An enema of three pints was given without

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difficulty, but no fæces came away. Opium internally, and hot fomentations were ordered.

Next day there was no special change. Vomiting continued; the pulse was 78. The only local alteration was the following:—Some dulness on percussion in both flanks as high as the anterior superior iliac spine; when the patient lay on one side, the opposite flank became more resonant. This fact was verified by several independent observers. In the evening of the following day the patient sank rather rapidly, and died without the development of any further symptoms beyond considerable restlessness.

The temperature throughout was subnormal.

At the post-mortem examination, the small intestine was found to be greatly distended with fluid fæces and gas; there was intense inflammatory injection on its peritoneal surface, but no lymph was observed. There was no fluid in the peritoneal cavity.

About a foot above the ileo-cæcal valve the small intestine dipped down into the pelvis and doubled back upon itself at so sharp an angle that the descending and the ascending portions of the loop were almost in contact; it was here much contracted, measuring only about three-quarters of an inch across, and thus formed a marked contrast to the dilated portion above; it was solid to the feel, much like a firm umbilical cord; and its peritoneal surface was intensely inflamed, of an angry dark purplish-red colour, most marked at the angle where the intestine doubled back upon itself. The ascending portion, bound by soft adhesions to the back of the pelvis, formed the anterior wall of an irregular cavity about 2 inches across, which had apparently been opened post-mortem, and from which fæces had escaped. This cavity was partially lined with ragged tracts of shred-like fibrinous false membrane. There was, however, no perforation of the ileum.

The mucous membrane of the stomach and of the small intestine was red and swollen throughout, much more intensely towards the lower end. There was no ulceration. Beginning 3 inches above the ileo-cæcal valve, and extending upwards for 4 inches, the narrowed loop of intestine before described was completely blocked by a solid cast of the tube attached firmly to the mucous membrane all round its circumference, and exactly resembling the false membrane of the air-passages in croup—a fibrinous material, toughish, greyish white, with a more or less stratified or

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mesh-like structure. This fibrinous deposit could be removed from the mucous membrane without causing more than a superficial loss of substance. At either end this solid cast tailed off for about 3 inches as a ragged coating of a part only of the inner wall of the intestine, much more readily detached from the mucous membrane, and towards its termination gradually losing its firm fibrinous character, and showing the transition from croupous to catarrhal inflammation which, in croup, is so often met with in passing from the larynx downwards.

The lining membrane of the cæcum was somewhat injected. The vermiform appendix was pervious for a quarter of an inch, and then opened into the ragged cavity before described. No foreign body was found. The large intestine was collapsed, and contained a number of scybala.

The lower lobes of both lungs were studded with recent hæmorrhages, from the size of a millet seed to that of a hazel nut. The cause was found to be a large *ante-mortem* clot in the right side of the heart, extending from the auricle into the ventricle, and rough and granular on its free surface, which was studded with small clots of later formation. The other organs were healthy.

On microscopical examination of the portion of intestinal wall to which the cast was adherent, the mucous membrane and the submucous tissue were found to be swollen and infiltrated with leucocytes.

Remarks.—Two points in this case call for special comment—(1) the pathological condition and its mode of occurrence; and (2) the data for diagnosis.

Inflammation marked by the formation of a fibrinous exudation occurs in the intestine in various conditions, such as dysentery, and rarely true diphtheria, as also occasionally in certain chronic forms of inflammation characterised by the passage of shreds of false membrane or even tubular casts of the intestine. But I have not been able to discover any other case on record where the intestine has been found to be completely plugged with this fibrinous exudation.

I am inclined to think that the following was the probable course of events:—First, ulceration of the vermiform appendix, perhaps without any special symptoms; next, perforation of the appendix, but prevention of the escape of its contents into the abdominal cavity by previous adhesions of surrounding parts—this period would probably correspond with the first onset of abdominal symptoms. Then extension of the

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inflammation to the adjacent small intestine, and then upwards throughout its whole length—less intense at first, corresponding with the period of preliminary diarrhœa, and then becoming so severe as to cause arrest of peristaltic action and consequent obstinate constipation. The intestinal inflammation took on the croupous type in the portion nearest the appendix, and the result was the gradual narrowing of the canal by continued exudation until at length it was entirely obliterated.

It is probable that complete blocking of the intestine by false membrane would occur only where the inflammation was so intense as to cause stasis of the fæces, for their continued passage and the peristaltic movements of the walls would tend to loosen the exudation and carry it away. And hence it probably happens that in such a condition as dysentery, where diarrhœa is a prominent symptom, there is never so thick a layer formed as materially to obstruct the passage of fæces, while shreds of the false membrane are found in the evacuations.

It may be remarked that there was no evidence to warrant the belief that this was a case of true diphtheria affecting the intestine.

There is one other point which calls for notice. It will be remembered that during life the usual signs of ascites were present—dulness in the flanks changing with the patient's position—and that post-mortem there was no fluid in the peritoneal cavity. The following has occurred to me as a possible explanation of this anomaly:—The intestine was distended with both liquid fæces and gas. When the patient lay on his back, in each individual coil of intestine nearest the abdominal wall the liquid fæces would chiefly occupy that part of the circumference in contact with the flank; when he lay on his side, in the flank that was uppermost, the gas in each coil would rise to the top, immediately beneath the percussing fingers; and it seems not unreasonable to suppose that in the latter case there would be more resonance than in the former.

2nd. The data for diagnosis. The sudden onset of symptoms in this case was in favour of the presence of one of the causes of acute obstruction of the bowels; chiefly hernia, internal strangulation, intussusception, volvulus, impaction of gall-stones, and enteritis simply. And here the preliminary diarrhœa which preceded the constipation was of much importance; for, letting alone the fact that there

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was no positive evidence in their favour, this diarrhœa was inconsistent with the usual history of hernia, internal strangulation, volvulus, intussusception, and impaction of gallstones. Following out this process of exclusion, there remained only enteritis simply.

Was there positive evidence in favour of enteritis alone as the cause of the obstruction? The preliminary diarrhœa followed by constipation was in accordance with the view that a mild inflammation affecting at first only the mucous coat had become more severe and had implicated the deeper structures of the intestinal wall; diarrhœa, the result of irritation, giving place to constipation, the result of cessation of peristaltic action in the inflamed part. But there was an almost entire absence of the ordinary acute symptoms of this condition—no febrile onset—a tongue almost clean; practically no pain or tenderness, no tormina, no marked abdominal distension, no stercoraceous vomiting, no hiccup, a subnormal temperature, a pulse of 78 to 80, regular, large, and soft up to the day of death.

Notwithstanding this, I concluded that the obstinate constipation was probably due to severe enteritis independent of any condition that could justify surgical interference; being guided both by the results of the process of diagnosis by exclusion, and also because in my experience it had been the exception for acute inflammatory affections of the abdomen to be accompanied by those severe symptoms that are usually described as their characteristics. I have seen again and again patients suffering from acute general peritonitis almost free from local and general symptoms; I have seen a patient with severe acute dysentery with but little pain and tenderness and with an abdomen soft and flaccid up to the occurrence of death, while perforation had taken place, and the whole of the large intestine had been transformed into a mass of ragged sloughs; and I have seen a patient with extensive gangrenous intestinal ulceration, up to the occurrence of perforation, absolutely free from all local and general symptoms except constipation.

In fact, my experience would lead me to say that if the usually described symptoms of an acute abdominal affection are present, they are most valuable; but that if they are one, or more, or all of them absent, the absence of acute inflammatory mischief cannot be predicated. And yet I think that this latency of symptoms is not without its positive value in diagnosis; for where obstruction is due to some

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suddenly induced mechanical cause, relievable it may be by timely operation, acute symptoms are far more commonly pronounced.

This subject may be summed up in the two following propositions:—

1st. That an entire absence of acute symptoms may coexist with an intense local inflammation of the abdomen; and that therefore in all cases of apparent intestinal obstruction it is prudent to adopt treatment consistent with this knowledge.

2nd. That if in a case of apparent intestinal obstruction urgent symptoms are in abeyance, this is in favour of the view that the condition is either non-acute, or, if acute, not to be relieved by operation.

XXIII.—*A Case of Intestinal Obstruction in which the Abdominal Cavity was explored, a Stricture found, and the Gut successfully opened.* By Howard Marsh. *Read February* 14, 1879.

L. L., a gipsy, 40 years old, was taken into St. Bartholomew's Hospital, on Oct. 15, under Dr. Church, with intestinal obstruction. She said she had believed herself well, and had noticed no trouble in the action of her bowels till Oct. 7, when on stooping, as she was working in a field, she was suddenly seized with severe pains in the left iliac region; this was followed by frequent sickness, and, although she took many strong aperient doses, the bowels did not subsequently act. On admission she had complete intestinal obstruction, and was still frequently sick. Her abdomen was tympanitic and tense, so that a full examination was impossible, but the colon, which was much distended, could be traced through the umbilical and left lumbar regions. No hernia, intussusception, or other cause of obstruction, could be found. The patient was much exhausted, and looked pinched and distressed; her pulse was 120, small and feeble, her skin was relaxed and clammy, her temperature was beginning to fall. In consultation, some of the staff, noting the patient's age and the fact that a distended colon could be felt, and thinking it very probable that she had stricture of the sigmoid flexure, recommended colotomy. Others, holding that the account which the patient gave of her previous

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health, and of her present illness, while leaving the nature of the obstruction very doubtful, seemed strongly to suggest some form of internal strangulation, which, if left, might lead to gangrene of the intestine, advised that the abdominal cavity should be opened and explored.

The latter operation was at once performed. When the bladder had been emptied, an incision 6 inches long was made through the linea alba below the umbilicus. Then starting from the coil which presented in the wound, and which fortunately proved to be a part of the descending colon, and working with lengths of about 6 inches, always returning one piece before drawing another out, as suggested by Mr. Cripps, I traced the intestine towards the left iliac fossa. In doing so I soon came, at what seemed the middle of the sigmoid flexure, on the obstruction, which consisted of an annular stricture of malignant character. The constricting growth was limited entirely to the wall of the intestine, the adjacent meso-colon being quite healthy. The intestine, just above the stricture, was fastened by several closely-placed sutures to the margins of the incision in the linea alba, and a false anus established. The whole operation was very easy, and was speedily completed. Fæces were freely discharged. A few words will be enough for the future history of the patient. Though in a very exhausted condition for four or five days, she had no bad symptom: the abdomen became flaccid; such pain as she had—but it was never very severe—was relieved by opiates; the wound gave no serious trouble. She slowly regained strength, and left the hospital at the end of about two months. I have been unable to ascertain her present condition, as she has left London and gone back to her tribe.

Remarks.—In this instance, when it was found that complete obstruction had existed for eight days, that the patient was frequently sick, that her abdomen was distended, and her strength failing, the operation was immediately performed. The patient recovered. What are we to think of the case? Was it successful by some rare and lucky chance which could not generally be relied upon—or was it not, in reality, an illustration of what, if in dealing with intestinal obstruction we more frequently abandoned expectant treatment and resorted to early surgical interference, might be the rule rather than the exception? Shall we ever know what percentage of cases of obstruction might, like the present, be saved by surgery until we adopt the rule of operating

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before peritonitis and other serious local changes have set in, and before the patient's strength has slowly ebbed away? In cases of strangulated hernia which cannot be reduced by other means, we operate at once. Why do we not do the same in cases of obstruction? We have not done so hitherto for two reasons: First, because, since some patients have unexpectedly recovered without surgical interference, it is said that we cannot be sure in any given case the operation is really necessary; and, secondly, because the operation has been thought to be highly dangerous in itself. The first objection must be allowed some weight, yet we must be careful not to over-rate it. For it is raised in somewhat general terms, and at present we are ignorant alike of the frequency of these unexpected recoveries, and of the precise nature of many of the cases in which they have been met with. Mr. Hutchinson has pointed out that obstruction is not seldom diagnosed when no obstruction is present, and obstruction, as all know, is sometimes due to impacted fæces. If these cases be removed from the list, some or even many unexpected recoveries will no doubt remain. But would not some at least of this residuum of cases, which so agreeably surprise the physician, be due to that kind of defective knowledge and defective diagnosis which further experience and careful observation are happily rendering more and more rare? Is the time very distant in which, at least in the majority of cases, a diagnosis may be pretty confidently made between cases which may and cases which cannot recover without surgical interference? Doubtless, true mechanical obstruction, whether due to intussusception, a constricting band, or internal hernia, may, even when it is of long standing, be unexpectedly relieved; but the important question seems to be, whether the occurrence is so common that, although with every hour's delay we must regard it as more and more unlikely, although until it happens the patient is steadily losing ground, and although, if it fails, the patient's death is generally a foregone conclusion, we are justified in waiting day after day in the hope that it may still take place.

Ought Dr. Church to have waited in this case? Would this patient have recovered if she had been left for even another 24 hours of expectant treatment; or, in other words, of vomiting, of pain, of starvation—for she could take no food—and of sleeplessness, if opium were not given—or, if it had been used, of drowsiness during which, though the symptoms were suppressed, the condition of the patient

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would have been hourly growing worse and worse? I believe that she would not; and I believe that expectant treatment would have been as much out of place in this instance as it would be in a case of strangulated hernia.

As to the danger of opening the abdominal cavity, does not the present instance afford suggestive evidence on this point? Here was a woman of 40, who had had obstruction and urgent symptoms for eight days, who yet bore the operation so well that her only apparent danger after it was from exhaustion, with which she had been suffering severely before it was performed. Does not this case range itself with the now ample experience of ovariotomists in showing in how large a percentage of instances the abdominal cavity may be safely opened? Several operators have reduced the mortality of ovariotomy to less than 30 per cent. Is it more dangerous to open the abdominal cavity—that is, before material changes have ensued—and divide a constricting band, or release an intussusception, or establish a false anus, than it is to open the abdominal cavity and to remove a large tumour, of which perhaps much is solid, and which is perhaps extensively adherent to the intestines, the omentum, or the uterus? May we not conclude that operations for obstruction have hitherto seemed almost hopeless, because they have been performed only on patients who have been watched and starved, and, at least as to their organic functions, stupefied with opium till they were in a dying state—in a state, that is, in which amputation of a leg, or the removal of a breast, would certainly be fatal—and till their intestines were distended with flatus, and already beginning to soften? And are we not justified in thinking that we perceive almost the proof that, if the operation be performed before dangerous exhaustion has set in, and before the parts concerned have materially suffered, patients may recover after operations for obstruction in fully as large a percentage of instances as is now secured in ovariotomy? The persistent labours of a few determined surgeons, who were confident that they were right, and who could show an ever increasing ratio of success, have gained for ovariotomy a foremost place among the great achievements of our time. I confess that I believe a similar future is in store for the surgical treatment of intestinal obstructions.

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XXIV.—*Acute Intestinal Obstruction—Laparotomy—Removal of a large Impacted Gall-stone from the Ileum—Death from Peritonitis.* By THOMAS BRYANT. *Read February* 28, 1879.

ON the evening of August 8, 1878, I visited, with Mr. Robert Barlow, of Albion Road, Dalston, Mrs. R., æt. 50, who had been ill for three days with symptoms of intestinal obstruction.

She had been perfectly healthy up to the time of her present attack, and had never had an illness of any kind, though she confessed to having suffered at times from indigestion. Her bowels had always been regular.

On the night of the present attack she went to bed as usual, feeling quite well, when she awoke about 12 o'clock with sickness and severe abdominal pain which doubled her up. She took some warm brandy and water with temporary relief, but the pain and vomiting soon returned. Next morning, as the symptoms persisted, medical advice was sought, and a dose of aperient medicine given, the symptoms being attributed to 'a bilious attack.' The vomiting at this time was greenish. No benefit followed this treatment; the paroxysms of pain recurred, the intervals between them shortening, and the matter vomited gradually becoming more offensive. Opium was given, but it, with all food, was at once rejected. For some five hours before I saw her, the vomiting had been fæcal; no flatus or motion had passed downwards since the onset of the symptoms.

On my visit I found her writhing in an agony of abdominal pain, with a chamber vessel full of fæcal vomit by her side. Her abdomen was much distended in all directions, and universally tympanitic, but no peristalsis was visible, although I thought I could detect one large coil of bowel more distended than the rest. The whole abdominal surface was tender, and during a paroxysm of pain the centre of distress was fixed to the left of the umbilicus. The countenance was extremely anxious, and the pulse feeble. But little urine had been passed. No external hernia could be detected, and nothing abnormal was revealed by a rectal examination.

The diagnosis made was that of acute intestinal obstruction, which was supposed to be due either to a band, twist or internal hernia, there having been nothing in the history of the case to suggest the true cause. Under these circum-

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stances, laparotomy was proposed, all evidence tending to show that death would to a certainty take place if relief were not afforded, although from the depressed condition of the patient, and the clear evidence of existing peritonitis, the prospects of recovery were but poor. Still, it was deemed right to give the patient the benefit of an operation, as in a desperate case of strangulated external hernia, where without one no hope could be entertained. For this purpose I had her removed at once to Guy's Hospital, where I operated.

Operation.—An incision was made from the umbilicus downwards for about four inches through the abdominal parietes, when some blood-stained serum escaped, and greatly distended claret-coloured coils of small intestine appeared, the coils in parts being deeply ecchymosed as if bruised. These coils were first followed in one direction up to the duodenum, and then in the opposite, down to a part where a hard ovoid body was impacted. The intestine (which grasped this body very firmly) was distended above it, and completely collapsed below. An incision was then made upon this body, and the gall-stone represented in the drawing (plate ii., fig. 1) gently extracted; the wound in the intestine being carefully stitched up with fine carbolised catgut, and the bowel returned, although in order to effect this, the intestine had to be punctured in two or three places with a fine trochar and canula to allow of the exit of flatus and fluid fæces.

The external wound was then stitched up. The patient, however, never rallied from her collapse, and sank in eight hours. The coils of bowel were so distended at the time of operation that fissures in their peritoneal covering were visible, and between every few inches patches of ecchymosis were seen, these patches having evidently been due to the mechanical injury caused by the passage of the calculus.

Post-mortem five hours after death. The abdomen was somewhat distended. On opening it, highly congested coils of small intestine matted together by lymph became visible. Directly beneath the wound made in the operation lay the intestine from which the calculus had been removed, the incision into the bowel being well sealed with new material. This portion of the bowel was subsequently made out to have been the lower part of the ileum, about a foot above the ileo-cæcal valve.

Some blood-stained serum was found in the abdominal cavity, but no fæcal extravasation. The bowel below the seat of the obstruction was collapsed but healthy.

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The liver weighed 54 oz., and was healthy. The gall-bladder was replaced by a thickened pouch about the size of a walnut, to which the hepatic flexure of the duodenum was firmly adherent. On opening the stomach, the finger could readily be passed through the pylorus and first portion of the duodenum, and beyond this a slight annular constriction existed at a point corresponding to the opening into the gall-bladder, and this condition had all the appearances of being of long standing. No signs of recent inflammatory change were visible, and no gall-stone.

The gall-stone that had been removed from the bowel (plate ii., fig. 1) measured 1⅞ inches in length, 1⅛ inches in diameter, and 3¼ inches in circumference. It weighed 238 grains.

The kidneys and other viscera were healthy.

Remarks.—This case is full of interest from a pathological as well as a clinical aspect, the preparation demonstrating the fact—which I believe is not unusual—that the gall-stone which I had removed from the ileum had clearly made its way in a direct route by ulceration from the gall-bladder into the duodenum, and had never obstructed the biliary duct; and the clinical history of the case proving that the patient had neither had jaundice nor anything like it, and had never had more severe abdominal pains than such as had been attributed to indigestion. There had been no colic and no vomiting. Indeed, it would seem that the first decided symptoms to which the calculus in its travels had given rise were such as characterise all cases of acute intestinal obstruction from whatever cause, the sudden onset of the symptoms attacking a patient apparently well, their severity, paroxysmal nature, and rapid development being typical of this class of cases. It was under these circumstances, and with such a diagnosis, that I felt bound to give the patient the benefit of an operation. It is true that with symptoms of acute strangulation of three days' standing, and fæcal vomiting, the prospects of a successful result were not great; still, where without such an effort death seemed certain, the line of duty appeared clear; for I hold that in all cases of acute intestinal obstruction that resist medical treatment, operative relief should be resorted to as soon as a reasonable diagnosis has been made, and that, as in a desperate case of strangulated external hernia, an exploratory operation should be performed in most cases. I believe that the surgeon or physician has no right to waste time whilst he is speculating as to the exact seat of the obstruction or precise

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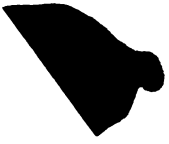

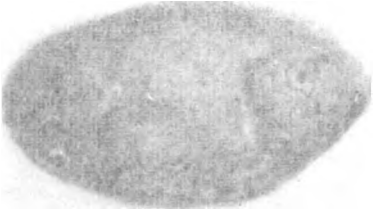

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R. Mintern, lith. Mintern Bros. chromo.

Mr Bryant's cases of Gall-stone.

Fig. 1. Gall-stone causing intestinal obstruction. See page 106.
Fig. 2. Gall-stone removed by operation from the Gall Bladder See page 201.

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cause by which it has been brought about, since there is no room to doubt that during this ruminating process the prospects of recovery are rapidly diminishing. Indeed, I believe a surgeon may as well delay in cutting the rope in a case of suicide by hanging whilst he is speculating as to the influences that have led the man to perpetrate the act, as to delay operative interference in a case of acute intestinal obstruction with the hope that he will be able to make a scientific diagnosis of the case, or that something will turn up by which relief may be obtained; for a scientific diagnosis of the case is not necessary, and to wait with the hope that the case will right itself by natural means is about as futile in a case of internal strangulation as it is recognised to be in one of external hernia; and if statistical evidence could be applied to the two classes of cases, I am disposed to think the proportions of recovery by natural means would be found to be as frequent or unfrequent in the one case as in the other.

In the case before us success did not follow the operation, because it was performed at too late a period; 72 hours of acute obstruction, together with the mechanical injury caused by the passage of the calculus downwards, giving rise to an acute peritonitis, which rendered success almost impossible. Still, the most that can be said against the operation is that it failed to save; for had it been undertaken earlier there is good reason to believe that a better result might have been secured.

I am quite aware that in advocating early interference in these examples of acute obstruction I shall be met by observations regarding the difficulty of diagnosis—which I respect—as well as by the well-known truth that these cases do at times, in an unexpected way, right themselves, and that under these circumstances so severe a measure as laparotomy should not be undertaken. But I do not see the matter in this light. For I maintain, that it is not required of the surgeon to diagnose the precise cause of the obstruction, so long as the diagnosis of its existence can be determined; and do not think, because such cases as these occasionally recover without operative treatment, we should forget that a large majority die miserably, unrelieved. I plead, therefore, for the majority.

The surgeon having made the diagnosis of acute intestinal obstruction, unconnected with any symptoms of an antecedent chronic change—a diagnosis which can generally

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be made from the *clinical* history of the case—I hold is bound to act upon it, since timidity in doing so ensures failure in the very class of cases in which success might be expected.

I would add that in the case before us the injury done to the small intestine by the passage of the calculus, as evinced by the patches of ecchymosis which were visible at the operation, is another argument in favour of early operation even in such cases as these, since it must have been by such an injury as much as by the obstruction that the fatal peritonitis was set up.

XXV.—*Two Cases of Left Lumbar Colotomy, the one under the care of* Dr. Silver *and* Mr. Barwell; *the other under the care of* Mr. Barwell. By Richard Barwell. *Read February* 28, 1879.

Case I.

JOHN D., æt. 39, was admitted into Charing Cross Hospital, under Dr. Silver's care, November 8, 1878.

History.—He is a farm labourer, residing in Hampshire, and has always enjoyed good health, his bowels being moved regularly every day until last harvest, when his work was rather hard, and he drank a good deal of beer. About that time he began to feel pricking pain in the lower part of the abdomen, extending upward and to the left side; these pains were frequent and intermittent, but his appetite was unimpaired, and he went on with his work, yet felt sufficiently ill to consult a medical man, who attributed his pain to colic. This trouble was from the first accompanied by a tendency to constipation, and after the first fortnight the evacuations occurred but twice or at most three times a week, and then only with the aid of purgatives, yet he continued at work till after the middle of October. At that time, what he describes as 'pain and stiffness inside him' on bending, caused him to take to his bed; the constipation also became more and more marked, notwithstanding medicines and enemata. All through the malady the motions had been hard and scybalous, and this was noticed even before the protracted constipation commenced.

State on Admission.—The man when admitted into hospital looked a ruddy, well-nourished, country labourer, nor was his appearance in any way indicative of dangerous

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disease. His personal and family history was good. He complained of constipation, stating that the bowels had not acted for nine days, also of rolling or twisting pains in the abdomen. He was hiccuping, but there was no vomiting. His abdomen was distended, but not markedly so, and careful examination revealed no distinct, nor localised tumour in any part. True, it was fuller on the left side, and in the left groin certain hardened masses could be felt; but there was nothing of the kind usually associated with the idea of an abdominal tumour. It was clear that great part of the uneasiness was due to pent-up flatus, but equally certain that solid accumulation had its share in giving rise to the distension. The first thing, therefore, was, if possible, to get rid of these. Therefore (November 10), turpentine enemata and turpentine stupes to the abdomen were freely employed, also (November 11) he had of extr. opii. ½ grain, extract of belladonna ½ grain every four hours.

Nov. 12.—This latter prescription was changed to liq. strychniæ ♏xv., tinct. belladonnæ ♏xx., with aquæ ℥ss. every four hours. The enema to be used every other day.

20.—The treatment had apparently very favourable results; much flatus and a good deal of hard fæces came away; but a good deal of abdominal tension remained. All sickness and hiccup had promptly disappeared. After the evacuation of these matters there came more prominently under notice a small irregular and very hard mass in the upper part of the left groin, and the question as to its nature had to be determined. Taking into consideration the very gradual onset of the symptoms, the first idea would be that the case was one simply of prolonged and obstinate constipation, and that what was felt through the abdominal walls was a mass of hardened fæces. But another alternative was not overlooked. It was considered quite possible that the mass above the left groin might be a hard carcinomatous swelling, causing imperfect obstruction of the bowel, for it must be noted that much hardened fæces had been brought away by the enemata. The man gradually improved, but the nodule remained, neither was the constipation entirely overcome, and at last, Dr. Silver, thinking it well to try (November 20) a combined method, ordered two drops of croton oil, a large turpentine enema, and turpentine stupes to the abdomen. No beneficial result followed; when next Dr. Silver saw him (November 22), he was very much worse, his abdomen was swollen and tympanitic.

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His breathing was very much interfered with; the whole surface, but more especially the finger-tips, were blue and cold—in fact, the man was dying.

Dr. Silver asked Mr. Barwell to see the case with him. After digital examination, he passed an O'Beirne's tube very gently as far as it would go into the bowel, and injected slowly about 8 oz. of warm water, which came away clear and at once by the side of the tube. On withdrawing the instrument, a very little feculent matter was found adhering, and it was slightly tinged with blood.

Mr. Barwell thought left lumbar colotomy afforded the only chance of saving life. Dr. Bruce and Mr. Canton, who also were called into consultation, taking the same view, Mr. Barwell at once proceeded to operate.

At first a little chloroform was very cautiously administered, the narcosis being prolonged with ether, under which influence the man's pulse improved. The operation itself, always a very easy one when the colon is distended, offered no further peculiarity than that the sub-peritoneal fat was unusually thick. The lower end of the kidney having been clearly made out, two threads were passed through the bowel, and at first but a small opening was made. A quantity of semi-fluid fæces flowed, but it was afterwards necessary to enlarge the opening, as lumps of feculent matter obstructed the passage. For the same reason the lower bowel was syringed out with warm water. The man, owing probably to the stimulus of the ether, seemed less exhausted than before the operation.

Nov. 23, 10 A.M.—The patient was still in a greatly exhausted condition, but less so than twelve hours ago; his breathing was comfortable, and the surface no longer blue. 5 P.M.—Up to three o'clock the man seemed doing fairly well, but at that time symptoms of greater exhaustion came on, and he died at the hour above specified.

Autopsy, Nov. 25.—The abdomen, on being opened, showed incipient peritonitis over nearly all the small intestines, their surface was very slightly dulled, and felt sticky to the fingers; this stickiness, with some hyperæmia, was, indeed, the only sign, in this very early phase, of inflammation. There was no peritonitis over the colon, nor about the parietal layer of the membrane at the seat of operation, nor was there, on this aspect of parts, any sign of an operation having been performed. The bowel below the seat of operation was greatly distended, and on its removal a ring-shaped

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stricture, an inch broad and about half-an-inch thick, was found at the upper limit of the sigmoid flexure. This was very firm, and so tight that when the gut above it was filled with water none flowed through the strictured part. It was epitheliomatous, and had begun to ulcerate. There was, however, no secondary deposit anywhere, and only one or two meso-colic glands were slightly enlarged.

No other organ was diseased; the liver, spleen, and kidneys were much injected; the right side of the heart was distended with thick dark blood. The left side was firmly contracted, and contained the common polypoid colourless blood clot.

Case II.

Le Ch. C., æt. 32, admitted into Charing Cross Hospital under the care of Mr. Barwell, May 11, 1877, suffering from almost complete obstruction of bowels.

Past History.—The family history is very good, without any cancer or tumour of any description. She herself has had excellent health, and has borne two children, the youngest being fifteen months old. This labour was difficult and protracted, but no instrument was used. Shortly after deli very she had diarrhœa, with much straining an pain, passing also per rectum a good deal of blood. States that at a dispensary, and at St. Mark's Hospital, she was treated for piles, no examination of the bowel having been made. Stricture of the bowel seems to have come on gradually, the motions both in quantity and size diminishing; the last she passed, about three days ago, she says resembled a few peas.

Present State.—The abdomen is much distended, here and there tympanitic; the left lumbar and inguinal regions are full and dull on percussion. She is very frequently sick, especially after any form of food or drink. On examination per rectum, about two inches above the anus, a nodular, hard stony mass was felt, in the centre of which was an opening, which barely allowed the passage of a rather thin finger; this mass extended further than the finger could reach.

May 13.—I instructed the dresser of the case to carefully pass a large gum-elastic catheter along this opening, and inject from 10 to 20 oz. of warm water slowly, and to let the nurse show the result.

15.—The injection slowly returned, bringing away some dissolved feculent matter and a few lumps. During the

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retention she was twice sick and felt very faint, but afterwards was a little relieved. Injection to be repeated.

17.—This second injection came away barely stained with fæces, and more rapidly. The tumour seems growing rapidly towards the anus, and the opening to be closing. The woman eats nothing, and is losing flesh, while the abdomen becomes more distended and painful.

18.—It was decided in consultation that the above operation was the only method of relief. I at once opened the bowel in the usual manner, with a slightly oblique external incision. Three ordinary washing basins of very offensive dark-coloured fæces escaped. A considerable quantity of stimulant and frequent feeding with strong beef tea were ordered.

19.—Patient very comfortable; no sickness. Temperature—morning, 99·2°; evening, 100°.

20.—To-day a good deal of fæces passed per anum. The patient takes food well.

24.—Patient is doing perfectly well; the bowel is well adherent to the edge of the wound, and some of the sutures have been removed. A good deal of fæces flowed away from the anus to-day; after this date no more passed by that channel. A teaspoonful of charcoal to be given every six hours. Sulphate of magnesia, half a drachm, twice a day.

July 28.—As far as health, digestion, &c., are concerned, the patient is in excellent condition; the usual ebonite plug enables her to keep fairly clean, and to evacuate the bowel at will. The cancerous growth is, however, rapidly progressing; it now involves the vagina, vulva, and perinæum, and is beginning to ulcerate. It was necessary to send her out of the Hospital, and I proposed getting her admitted into some infirmary, but she preferred going home, which she did on August 10.

From time to time her husband came for medicines, and reported that the cancer grew very rapidly, but that she managed the plug and the evacuation of the bowel quite comfortably. After about two months she became much exhausted; all the lower part of her body had become a great ulcer, which discharged a very great deal. Again, in a week or two, it appeared that great troubles with micturition had set in; these terminated in complete incontinence. She died exhausted, I fear a very miserable death, about three months after leaving the hospital—more than five months after the operation.

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Remarks.—In many ways these two cases are similar, but in the former case very great exhaustion and oppression had come on previous to the operation, and about that time, or shortly after, peritonitis, almost confined to the small intestines, and at the time of death quite incipient, had set in. This peritonitis was not the cause of death, nor was it produced by the operation, the part of the intestine implicated being covered by quite healthy membrane.

No case can show more clearly than the second one the advantages of lumbar colotomy in giving relief. The fact that fæces passed per anum after the bowel had been partially emptied is significant of the fact that excessive pressure from above is one great cause of obstruction; in fact, is that last increment which renders the obstruction complete. It also shows that if the disease had been of a remediable nature, the stricture might have been cured, probably without much difficulty, and the artificial anus closed. I am sure—and I wish physicians had the same faith which I have in the operation—that opening the bowel above the stricture should not be greatly delayed. An obstinate obstruction, threatening life, is after failure of one or two remedies, much more safely dealt with by the knife than by delay.

XXVI.—*A Rare Form of Intestinal Obstruction, due to the Invagination of a portion of Ileum in the walls of the Rectum—Gastrotomy—Recovery from Operation.*

By Edward Bellamy. *Read February* 28, 1879.

M. M., a pale, delicate-looking woman, æt. 34, of intemperate habits, was admitted into the Charing Cross Hospital, under my care, on February 15, 1879, with all the symptoms of intestinal obstruction. I ascertained that she had passed nothing per anum for nine days prior to admission. She had an inguinal rupture on the left side, and had worn a truss, which was left off just before the present attack, and the hernial protrusion does not seem to have come down since. She had been subject to obstinate constipation, and on three occasions the retention of fæcal matter had given rise to very serious symptoms, which, however, had always been relieved by ordinary means. On her admission a hard swelling was to be felt in the left iliac

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fossa, in the region of the inguinal canal and sigmoid flexure. She had intense pain over the lower part of the abdomen, and her eructations had a stercoraceous odour. I had her placed under the influence of an anæsthetic, and introduced my entire hand into the rectum, and found that I could not get my fingers past the upper part of the rectum, which seemed to be filled up by a protrusion into it, and which itself appeared to be constricted. I, however, determined to wait for a time before operating, and give the patient all chance of ordinary hospital treatment prior to doing so, but she grew rapidly worse, and the vomit became absolutely stercoraceous. I, therefore, on the evening of the 16th, proceeded as follows, strict antiseptic precautions being adopted:—I first made an incision down to the external ring, thinking that perhaps, from the history, there might be some intestine strangulated in the canal, or some reduction *en masse*. On passing my finger, however, into it, I found that this was not the case, but I could feel the sigmoid flexure greatly distended. I now enlarged my incision upwards and obliquely outwards, so far as to enable me to pass my entire hand within the abdominal cavity and feel for the constriction. Thinking it possible that the sigmoid flexure might have been constricted anteriorly by the fold of peritoneum extending from the posterior wall of the bladder and uterus, and *mesenterically* attached in front of the sacro-iliac synchondrosis (*the posterior utero-vesical fold*), I felt for it, and found it not only very much developed, but obscuring a knuckle of small intestine, which was obviously invaginated in the anterior aspect of the first part of the rectum, and that, in addition, there were what appeared to be—I did not see, I only felt—bands of organised lymph, stretching across the confined bowel, probably the result of some earlier inflammatory process in the locality. (The existence of these bands, and the over-development of the peritoneal fold, will probably account for the non-reduction of the hernia per anum). I again introduced my entire right hand into the rectum, and pushed the prolapsed mass upwards and towards my left hand, which was in the pelvic cavity, at the same time breaking down the adhesions and gently drawing out the knuckle of small intestine from its invaginated position, and so freeing it from the peritoneal fold. Very soon afterwards flatus was passed, and in a few hours a copious evacuation followed, of course affording immense relief. I need not detain the Society by detailing the sub-

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sequent conduct of the case beyond stating that she became very delirious on the fourth day, but the symptoms yielded to morphia and chloral. The wound was treated strictly in accordance with Lister's method, and she had no bad symptoms till Thursday, 26th, when she had some signs of peritonitis. This disappeared, and she went on well until her somewhat sudden death.

Remarks.—In looking up the literature of the subject I am unable to find any case where gastrotomy has been performed for a similar condition, although Linhart * mentions the form of hernia here described as possible, but he states that he has never known operation necessary. It will be concluded that the cavity of the peritoneum was opened; this was unavoidable from the nature of the adhesions, and I made my examination from within it.

The case shows the great importance of thorough rectal examination in cases of obstruction, the value of antiseptic treatment in dealing with the peritoneal cavity, and the application of the process of 'elimination' in the diagnosis of these obscure conditions; and it further suggests a more extended study of the peritoneal folds, their varieties, and possible influence on intestinal obstructions.†

Note.—At the time the communication was made to the Society the patient had not had a bad symptom after the severe operation she had been subjected to, and was, indeed, convalescent; when about a month later, and after the wound had healed, severe and persistent bilious vomiting occurred, and she sank six weeks after the operation. Unfortunately the friends would allow no post-mortem examination, so that I am unable to arrive at any absolutely correct explanation of the cause of death.

XXVII.—*On a Case of Tracheotomy in the Last Stage of Diphtheria—Recovery.* By GEORGE LAWSON. *Read February* 28, 1879.

I BRING this case before the Society—first, because the record of a successful result after tracheotomy, performed in the last stage of diphtheria, is very cheering, and

* *Compendium der Chirurg. Operationslehre*, p. 839.
† Conf. Kœnig, *Lehrb. d. Spec. Chirurgie*, bd. 2.

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adds a ray of hope that even in the worse cases an operation may be the means of restoring the patient.

Second, because the treatment adopted in this case after the operation varied a little from the beaten track, and, I cannot help thinking, contributed in some degree towards its successful termination.

H., æt. 8, the younger of a family of two daughters, was attacked with diphtheria on May 15, 1878, her sister having fallen ill with the same affection on the previous day. The throat symptoms were those of well-marked diphtheria.

Some hoarseness of the voice commenced on the 18th, but the diphtheritic throat symptoms seemed to have decidedly improved, and it was hoped that the child had taken a turn for the better.

On May 20 there was slight difficulty of breathing, and this gradually increased until the early morning of the 22nd, the day on which tracheotomy was performed. On May 21, the elder sister died with severe laryngeal symptoms.

Early in the morning of May 22 I was called to see the child with Mr. Morton, who had charge of the case, and Dr. Dobell. Her breathing was then very loud and stridulous; her countenance dusky; her face covered with perspiration; her finger ends livid, and there was a distinct pitting above the sternum. As it was evident that she was rapidly sinking, it was decided to open the trachea.

The child was placed on a table opposite the window, and Mr. Morton held the head well back over a pillow so as to put the neck as much on the stretch as possible.

I decided to do the high operation, and opened the trachea above the isthmus of the thyroid gland.

Immediately the incision was made in the trachea a piece of false membrane was coughed into the opening; this I seized, but was only able to draw away a portion of it, about one inch long and half an inch wide, and the rest slipped back. One of Durham's tracheotomy tubes was introduced, but the inner canula was removed, so as to leave the channel of the tube as large as possible.

The tube was then fastened in by a tape round the neck, and the child replaced in bed. The bed, which had no curtains, was drawn well away from the walls of the room, so as to give the patient as much air as possible. A bronchitic kettle with a long spout was placed on the fire away from the bed, and the room was directed to be kept at a uniform temperature of 65°.

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The father and nurse took charge of the nursing of the child, and relieved each other in turn. They were provided with a pair of dressing forceps, and instructed to seize at once any piece of false membrane which was coughed into the tube, and they were shown how, with feathers and water, to keep the tube free from the usual thick secretion which was blown into it. They were also told if the tube should become blocked and the breathing very difficult, to cut the tapes and remove the tube, and to keep the opening in the trachea patulous with Trosseau's forceps until the assistance of Mr. Morton could be procured.

The relief from the operation was very great; the child was enabled to breathe through the tube noiselessly, and soon fell asleep. From time to time she was disturbed by a choking up of the tube, but this was cleared away with the feathers.

In the afternoon of the first day, finding the tube much blocked with secretion, I removed it, and, after cleansing, re-introduced it. Immediately the tube was withdrawn a large piece of lymph, about the size and thickness of my little finger, was coughed into the wound, and, seized by the forceps, was withdrawn.

When the child was quiet or asleep, a single piece of net was thrown over the wound, but when any effort to cough began it was removed.

The child continued to progress favourably. Once and sometimes twice daily the tube was removed and a clean one introduced, and with each change there was generally some viscid secretion expelled through the wound. On the afternoon of the seventh day the tube was taken out for good, as it was found that the child could breathe comfortably without it. The wound in the trachea closed without an untoward symptom, and the patient slowly but steadily regained her health. A slight hoarseness of the voice continued for some months afterwards, but this has now passed away.

Remarks.—The points in this case to which I would specially refer are:

1. The position of the tracheotomy. I believe that opening the trachea above the thyroid gland (laryngo-tracheotomy) is more easily performed than the operation below the thyroid. The trachea in the upper region of the neck is more superficial, and fewer and smaller veins are met with

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in this locality than lower down in the neck. It is therefore the safer operation for the patient.

2. The use of a single tube.—By having only one tube there is a larger channel for the escape of the secretion; the danger of its being choked by secretion is, therefore, less than when there is a lining tube. If the tube should become much blocked, its removal will frequently allow viscid secretion to escape by the wound, which the patient is unable to expel by the tube. In this patient I believe that the removal of the tube once or twice daily contributed very materially to the successful result, as on each occasion during the first three days when the tube was removed large masses of secretion escaped through the wound, and after each change of the tube the child was greatly relieved. It should be remembered that a patient with a hole in the trachea cannot cough. He can make feeble efforts to eject irritating materials from the trachea, but he is seldom able to eject air with sufficient force to drive viscid mucus or a tenacious false membrane through a tracheotomy tube. I therefore advocate the frequent change of tube to facilitate the escape of secretion through the wound.

3. The having no tent or covering to the bed, and no steam close to the patient to heat and moisten the surrounding air.

I have long thought that the tent bed with a pipe conveying steam close to the patient was a mistake. I therefore decided in this case to give the child plenty of air, and accordingly had the patient's bed removed from the walls of the room, and the tracheotomy tube left either uncovered or covered only with a single piece of net thrown loosely over it when the breathing was quiet or the child asleep. The air in the room was kept a little moist by the bronchitic kettle, which was placed on the fire away from the bed. My impression is that this mode of treatment acted here beneficially.

In conclusion it is only right to state that the success of the operation was greatly due to the judicious care and constant supervision which Mr. Morton kept over the patient, assisted by the intelligent nursing which the father and nurse bestowed on the child.

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XXVIII.—*Case of Tracheotomy in the Last Stage of Diphtheria—Recovery.* By Pugin Thornton. *Read February* 28, 1879.

An outbreak of diphtheria occurred in St. John's Wood in the early part of September last. It was confined to a small radius, for, as far as can be gathered, only four houses were attacked. Each family was affected about the same time.

This outbreak of diphtheria, for which no cause could be ascertained, followed the epidemic which gave so much anxiety during the summer months in the N.W. district, and concerning which Dr. Power has issued a most careful report.

A. S., the subject of this paper, is a boy of 3 years of age. He was one of a family of three, the other two children having died before he was tracheotomised, their ages being respectively 4¼ years and 1 year. This child was first taken ill on September 16, the day after the eldest had died. At first he was attacked with laryngeal symptoms, but these passing off the tonsils were found to be covered with membrane. On the 27th, the eleventh day of his illness, his larynx again became affected, and from that day to October 1, when the youngest died, his breathing progressively grew worse. It was at this date that I was asked to see the child, and on this day I performed tracheotomy upon him. At the time of the operation the boy was labouring under urgent dyspnœa, being extremely restless, with his face slightly livid. There was no albuminuria.

For some days following the operation pieces of membrane were coughed up through the mouth, or removed with forceps through the tracheal wound, and, three weeks after, double strabismus set in, which lasted a fortnight. Another proof of the diphtheritic nature of the disease was that I myself was seized on the fourth day from first seeing the case with a mild tonsillar form of the complaint, being kept to the house about ten days. I had sat up the whole of the first night and part of the two following nights with the child.

The patient has done well, and I think may be called a successful case, although the progress of recovery has been very slow, for it is now five months, and the canula has still

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to be worn. During the day the tube is completely closed up with a cork, the child being able to talk freely and to run about the house; but at night the cork has to be removed, for after he has been asleep for a short time an attack of suffocation comes on, which can only be relieved by removal of the plug.

The treatment throughout the case has been iron and chlorate of potash internally, and for the membrane a lactic acid spray has been used.

The other two children died with laryngeal symptoms, showing this family to be one of the unfortunate instances of fatal family susceptibility. I know of another family of three small children who died during the summer epidemic in St. John's Wood, and, I believe, all with laryngeal symptoms.

My remarks have of necessity been few, as no notes of the case have been kept. Had it not been that Mr. Lawson was bringing forward a similar case I should not have published it. I trust, at the same time, that its publication with Mr. Lawson's may help to strengthen all of us in the conviction that tracheotomy in diphtheria is somewhat a more hopeful procedure than many consider it to be—at any rate, one which should be more frequently carried out than I believe it is. Undoubtedly these are instances of children who must have succumbed in a few hours if left unoperated upon.

XXIX.—*Case of Tapping a Fœtid Pyo-pneumo-Thorax.*

By C. Theodore Williams, M.D. *Read March* 14, 1879.

Mr. A. G., æt. 27, came under my care April 22, 1877, with a letter from Dr. Robertson, of Singapore, stating that in October 1872, in Switzerland, he had an attack of pleurisy of the right side, followed by persistent cough, and that in February 1873, at Singapore, Dr. Robertson found that the right side measured half an inch less in circumference than the left.

Early in 1877 he had a severe attack of left pleurisy, limited to the lower portion of the side between the mammilla and the edge of the latissimus dorsi, where there was distinct effusion which passed away in due time. Dr. Robertson

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stated the patient lived in Singapore, at an average temperature of 82° F., the climate being very equable and tempered by frequent currents of air, and that to the latter, when he was bathed in perspiration, which was constantly the case, was attributed the second pleuritic attack.

Mr. G.'s mother and six maternal uncles and aunts had died of phthisis. Mr. G. arriving in England in my absence, Dr. Quain kindly examined him, and discovered signs of active disease in both lungs.

I saw him some days later, and was told that he had been able to carry on his business until just before starting for England in March, when his cough became worse, and was accompanied by sweating and rapid loss of flesh. I found him with a temperature varying from 101° to 104° F., a pulse of 120, respiration quickened, cough violent and very troublesome, expectoration abundant, and containing a large amount of lung tissue. Though weak, he had not lost much flesh.

The physical signs were: flattening of the right side, and some crepitation in the second interspace; dulness above the right scapula. On the left side, coarse crepitation from the first to the third rib, and above the scapula.

He was ordered to bed and treated with salicylate of soda, and various combinations of food and stimulant.

In the course of a few days, the morning temperature fell to 99° F., and the evening remained between 100° and 101° F.; but under the use of effervescing quinine (in two-grain doses), it soon was reduced to the normal.

June 25.—He has improved steadily, gaining flesh and strength, cough moderate, expectoration half-a-pint daily, and still contains lung tissue; pulse quiet, temperature normal; on the left side cavernous sounds are audible from the clavicle to the third rib; crepitation is heard in the suprascapular and interscapular regions.

Oct. 24.—He has been four months in Scotland, eating well, and taking cod-liver oil regularly; he at first improved sufficiently to walk two miles at a time. He gained several pounds in weight, the cough had not been troublesome, but in the last month he had been troubled with severe bilious attacks, and had lost all the weight he had originally gained. At present the expectoration is moderate in quantity, and contains no lung tissue; temp. 98° F. to 99° F.; pulse and respiration quiet, tongue clean; cavernous sounds audible, as in June, to the third rib on the left side; crepitation audible

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over the lower third posteriorly, and also in the interscapular region; physical signs of the right lung as above. The patient wintered at Cannes under the care of Dr. Marcet, who forwarded me from time to time a report of his state. He at first improved, and was able to drive out daily, but on December 14 the evening temperature rose to 102° F., the cough became more troublesome, the expectoration became more abundant, yellow and fœtid, and Dr. Marcet, who made numerous examinations of the sputum, found lung tissue in it. The pulse rose to 120, and Dr. Marcet, in consultation with Dr. C. J. B. Williams, found evidence of a large abscess at the base of the left lung.

These symptoms continued more or less the whole winter, the temperature varying from 100° F. to 103° F., the cough being most harassing, and in spite of various antiseptics, the discharge, which varied in amount from 1 to 1½ pints a day, was so offensive as to induce diarrhœa, not only in the patient himself, but in his relatives and nurses. He had sometimes as many as 16 stools a day, and as the diarrhœa continued for four months, he became greatly emaciated. The stench was so strong that he had to leave one hotel on account of the nuisance it proved to his neighbours, and on his journey to England he was obliged to take a whole compartment of the railway carriage for the same reason; nevertheless his appetite remained fairly good, and, whenever he could drive out, he appeared to rally. Dr. Marcet tells me that on two occasions he thought he would have died from exhaustion. After a short stay at Bex, in Switzerland, he arrived in England on May 29, and I visited him on the 30th, when his state was as follows:—

Aspect cachetic, conjunctivæ yellow, great emaciation, malar bones prominent, and great wasting over scapula and buttocks. Cough convulsive, and always induced by taking food; attacks often last an hour until expectoration is attained. The discharge is about 1 pint daily of thick yellow material, mixed with some bubbles of air, and under the microscope is found to contain abundant lung tissue. It is extremely fœtid, and its odour, the patient states, takes away all appetite, and induces neuralgia of the right side of the face. Temperature 10 A.M. 99° F.; 3 P.M. 101° F., pulse 120, respiration 30, urine high coloured but clear.

Physical Signs.—Right chest. Signs of contraction as before. Breathing harsh everywhere, some crackle audible in the second intercostal space. Some dulness above the scapula.

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Left chest.—*Anteriorly.*—Dulness from the clavicle to the third rib; resonance below. Liquid cavernous sounds are heard over large insulated portions situated between the clavicle and the fourth rib. Between the lower border of the fourth rib and the upper border of the sixth rib, lie two distinct areas of different physical signs, separated by a line drawn 3 inches to the right of the left nipple, parallel with the sternum; over the inner area there is absence of vocal fremitus and indistinct breath sound. The outer area is bounded internally by the above-mentioned line, externally by the axillary line, and over it amphoric breathing is heard. There is marked resonance, which, however, diminishes if expectoration has not been performed for some time and increases on free discharge. Between the seventh and eighth ribs, 3 inches to the left of the nipple, a spot exists where a distinct impulse is felt on coughing. The heart is misplaced somewhat to the right. The stomach note is audible as high as the sixth rib.

Posteriorly.—Dulness above left scapula. Distant amphoric breathing heard in scapular and interscapular regions. Below, the chest is more or less dull, but breath sound is rather obscure, though not entirely absent.

It seemed to me clear that, in addition to the cavities in the upper lobe of the lung, an abscess existed either at the base of the lung or in the pleura, the position of which prevented easy expectoration, and thus led to the accumulation of the sputum and its various septic consequences.

The impulse felt on coughing, and the variation in percussion after expectoration, could be explained either by adhesion of the pleura overlying a thin-walled cavity containing much fluid, or by a localized pneumothorax; and on the whole I inclined to the former explanation. My reasons for preferring the diagnosis of cavity to that of pneumothorax were: (1) that the amphoric sounds were very circumscribed in area and exceedingly loud over that area; (2) that the impulse on coughing and the changes in percussion after expectoration were noted high up in the left chest, and not at the front base; (3) the character of the sputum.

It appeared to me that the only effectual mode of relieving the patient, whichever diagnosis we might adopt, would be to tap; but before deciding on this measure I proposed a consultation with Dr. Andrew Clark, who had previously seen the patient with me, to decide whether (1)

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the operation were justifiable; and, if it were (2), to settle on the best spot for puncture.

We met on June 13. The state of the patient had not materially changed; the expectoration was very thick, and contained large quantities of lung tissue; the cough and fœtor continued, with the consequent diarrhœa. The pulse was 120, respirations 32, temperature varying between 101° and 103° F.

Dr. Andrew Clark, before seeing the patient, expressed to me considerable doubt as to the advisability of the proposed operation, but, after a very careful examination, he confirmed my view of the existence of several cavities in the lung (one being of large size) and possibly of a localised pneumothorax; and when he saw the melancholy condition of the patient, and the hopelessness of relief by other means, he concurred in recommending puncture, telling the father of the patient that if it were his own son he would have it done. Dr. Clark remarked that the result was, however, doubtful—first, on account of the sputum being so thick that it might not flow freely; secondly, because it was not positively certain from which cavity the discharge came, though he inclined to agree with my conviction that it came from the lower cavity.

We settled that the best place to tap would be between the sixth and seventh ribs, 3 inches to the left of the nipple vertical line, where the impulse on coughing was most strongly felt, a lower point being deemed unadvisable on account of the stomach being drawn up, a conclusion which the results fully justified.

The operation was performed on June 18, by Mr. Erichsen, assisted by Mr. Marcus Beck. During the two previous days the expectoration had amounted to two pints daily, and had been more offensive than ever. The temperature had each afternoon risen to 102° F. and had never fallen below 99° F. The pulse was about 120.

At 5.15 P.M., after the skin had been frozen with ether spray, Mr. Erichsen made a horizontal incision about one inch in length between the sixth and seventh ribs, at the spot previously agreed on, and passed in a large-sized trocar and vulcanite canula, of a shape suggested by Dr. Law,* choosing a direction somewhat downwards and inwards. He met with considerable resistance after passing through the

* The Resident Medical Officer of the Brompton Hospital.

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muscular layers, and, owing to this, some of the parietal pleura was probably stripped from the thoracic wall. By a strong effort he succeeded in puncturing the thick, indurated wall, and on withdrawing the trocar, about a pint of most offensive pus, mingled with mucus, poured out. Mr. Erichsen then increased the size of the passage until he was able to pass the whole of his forefinger into the cavity, which appeared to be situated at some depth from the surface. The tube was fastened in by a tape and strapping. The patient bore the operation well, but at its close he was attacked with a severe fit of coughing, and air passed freely in and out of the tube. About ten minutes later swelling of the left side of the abdomen and chest was noticed, which proved to be subcutaneous emphysema, and this spread rapidly over the skin of the whole thorax and abdomen, extending downwards in front of the thighs and upwards to the neck and upper extremities. So rapid was its spread that the scrotum was distended in five minutes.

The patient complained of great dyspnœa; the countenance was distressed; the pulse 120; respirations 38. It was decided to remove the tube, and to replace it by a small catheter, and to extend the incision posteriorly. This was followed by some relief. Brandy was ordered to be given, a tablespoonful every hour, and spiritus ætheris in ℥j doses with water, if the dyspnœa returned.

We left the patient at 7 o'clock P.M. better, and declaring himself relieved by the operation; but at 8 P.M. I was summoned by a message from his father that the swelling had extended to the patient's face, and both eyes were nearly closed. I found his countenance bloated, the eyes closed; but the emphysema appeared to be deepest over the upper thorax. He was in great distress, the breathing having become difficult. A large amount of fœtid pus had escaped through the wound and canula, through which air at present hissed. Respirations 48, pulse 120. Mr. Erichsen arrived at 9.10 P.M., and, after consulting with me, increased the size of the incision anteriorly, and substituted a larger tube for the catheter, fixing it in by a tape passed round the body, and an antiseptic plaister kept it in place. The air, on expectoration, passed out of the tube with sufficient force to extinguish a candle.

11 P.M.—Swelling of face subsiding, breathing easier, pulse 120, respirations 40. Temperature could not be taken on account of distressing the patient.

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June 19, 9.30 A.M.—Passed a quiet night, though only slept for half an hour; swelling of face greatly diminished; patient can open mouth widely, and allow temperature to be taken, which is 98° F.; cough moderate; expectoration slight, but not fœtid; no fœtor of breath, but some offensive matter is ejected through the tube on coughing; has passed three fœtid stools. Mr. Erichsen finds the wound healthy. Auscultation impossible, because of the emphysema. In spite of swelling of scrotum passes water easily. Pulse 108, respirations fallen to 28. Has taken a dessertspoonful of brandy every hour, with nourishment through the night.

5.30 P.M.—Mr. Erichsen sponged out the wound and covered it up with cotton wool. Patient has passed a quiet day, taken brandy, ʒ ij., every two hours, with milk, eggs, soup, and other liquid food; cough slightly troublesome; expectoration scanty, consisting of greyish mucus; temperature 98° F., pulse 102, respirations 32.

June 20, 9.30 A.M.—Slept on and off most of the night, taking stimulant as before; emphysema gradually subsiding, wound healthy; scarcely any discharge, and that not offensive; cough rather troublesome, expectoration scanty, and also free from odour; tongue slightly furred; has passed one pale motion, which contained mucus, and had the same odour as the sputum before the operation. Temperature 97·8° F., pulse 96, respirations 28.

In the afternoon diarrhœa came on, and four motions were passed in five hours, the stools being loose, pale and offensive. Pain was complained of in the right hypochondrium, and a bad taste in the mouth. Temperature rose to 102·8° F., pulse to 120, respirations to 40.

This was evidently a bilious attack, which subsided under a few doses of calomel.

Two days later, in consequence of a summons to visit a patient at Naples, I left town for ten days, during which period Dr. J. E. Pollock kindly took charge of the case. From the careful record he kept I learn that on June 22 he found the discharge from the tube moderate, exhibiting slight fœtor in the morning; expectoration mucopurulent, scanty and free from odour; the pulse 110, respirations 36, temperature from 98° to 99° F. The cutaneous emphysema having subsided sufficiently to allow of auscultation, Dr. Pollock found the following:—Right chest: Movement good, percussion clear, except slight dulness over the spine of scapula; moist crackle in the suprascapular fossa. Left

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chest: Over lower two-thirds posteriorly percussion was clear and amphoric, and metallic; respiration and voice were audible, vesicular sounds heard only at the upper back and in the form of loose crepitation with bronchial voice. The sounds anteriorly, on both sides, were masked by the cutaneous emphysema. Dr. Pollock was of opinion that extensive pneumo-thorax was present, caused probably by the operation. During the following ten days the patient progressed favourably, with the exception of another bilious attack, a complication with which he has often been troubled, and which caused a rise of temperature for three days. His appetite improved, and he was able to take solids, and to diminish the amount of brandy. The discharge from the tube was moderate and free from odour, the expectoration slight, and the cough no longer troublesome.

July 4.—I found on my return from Italy the emphysema had nearly disappeared; the patient was cheerful, appetite good, tongue clear, bowels open four times a day, motions dark and offensive. The discharge from the tube is thick and greenish in colour, expectoration mucopurulent—the two together amounting to about 3 oz. daily, and free from smell. Both were carefully examined for lung tissue, and none was found. In addition to the physical signs found by Dr. Pollock over the posterior surface of the lung, I detected metallic tinkling in front, as high as the nipple, there being dulness and cavernous sounds from the clavicle to the fourth rib, as formerly.

As the tube had a tendency to become clogged on account of the thickness of the discharge, Mr. Erichsen washed out the cavity with a weak solution of Condy's Fluid by irrigation, and substituted a vulcanite tube inclosing a silver one, removable at will, so as to render the cleansing more easy.

July 19.—The patient has been driving out daily for an hour or two, eating well of solids twice daily, with ℥ iij. of brandy or an equivalent in wine.

The weather has been very hot, and there has been some rise of temperature the last two evenings. Pulse has varied from 84 to 108.

As the patient complained of the rigidity of the vulcanite tube an ordinary india-rubber drainage tube was substituted; but this, though more comfortable, became clogged, and was consequently discarded.

At a later date a change was made to a curved vulcanite

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tube enclosing a silver one; but as the patient complained that the unyielding material caused him pain, especially at the inner opening, Mr. Erichsen substituted a large-sized gum catheter, with one end cut slantwise, and secured in its place by silk threads and plaister. This was taken out two or three times a day and cleaned, and then replaced, either by the nurse or the patient himself, and answered admirably, the tube being sufficiently patent to allow the discharge to pass, and being flexible enough not to hurt the patient when he moved.

The after progress of the patient may be sketched in a few words.

The discharge remained the same in quantity (about 2 oz. daily), and of the same character, thick, yellow, free from odour, and showing under the microscope broken-down mucous and pus cells, but no lung tissue. Injections of solutions of quinine and Condy's Fluid were used from time to time, without materially altering the discharge, the fluids returning in much the same condition as they entered.

The wound remained indolent, with unhealthy granulations, and on several occasions showed a tendency to ulceration, both under its edges and in the intercostal space above, which had been laid bare by the operation. Here a small opening appeared, through which air bubbled, and when this and the lower one were probed, they were found to communicate with the same large cavity, which extended backwards to the spine and scapula, allowing a probe seven inches long to be inserted. Below, the probe came immediately down on the diaphragm, and both in the inner and upper directions it met with resistance. The pneumo-thorax was undoubted, but all attempts to reach the opening in the lung failed.

The patient was much prostrated by bilious attacks, but in the intervals regained appetite and some strength, being able to drive out daily. The cough was troublesome at times, the expectoration remained free from odour, about 1 oz. in quantity, and consisted of transparent mucus. He, however, steadily lost flesh and strength, the temperature showing an inclination, especially during the bilious attacks, to afternoon and evening exacerbations. It was evident that life could not be sustained much longer. His pulse and respirations became more rapid.

In December the left side was found to have contracted very considerably, measuring at the levels of the nipple and

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ensiform cartilage two inches less than the right. The physical signs on the left side were: Dulness, reaching to the third rib, but limited internally by the line of costo-sternal articulations of the left side, the sternum being resonant. Over this space, too, cavernous sounds were loudly audible. Below this point the sternum was dull, and there was resonance from the third to the fourth rib. Below the fourth rib percussion was tympanitic. The heart was apparently drawn up towards the right side, and lay close to, and immediately under, the sternum, nearly in the median line. Posteriorly, some dulness and cavernous sounds were detected above the spine of the scapula. Below this point was fair resonance as low as the seventh rib, and lower still, tympanitic sound. Auscultation showed metallic tinkle, and amphoric sounds from the spine of the scapula to the base.

After being much weakened by an attack of diarrhœa, the dyspnœa increased, and on January 1, 1879, œdema of the right leg appeared, and soon spread up the thigh, hips, and abdomen, to the lower and back part of the right side of the chest. The swelling crossed the median line of the abdomen, but was best marked on the right side. The urine was scanty, but free from albumen.

His symptoms became worse, and he died of gradual exhaustion on January 9, nearly seven months after the operation.

During the last few days of his life, Dr. Pollock noted that the temperature never rose above 97·4° Fahr. With difficulty, leave was obtained to make even a partial examination of the body, and this was done by Dr. Reginald Thompson, in the presence of Dr. Pollock, Mr. Shann, and Mr. E. Pollock, on January 11, 1879, of which the following is the report:—

Autopsy, 48 hours after death.—Rigor mortis passing off. Body thin; posterior surface much mottled. Right lower extremity very œdematous, even up to the pelvis. Incurvation of upper part of the thorax, chiefly on the left side, but involving the sternum. Lower ribs of left side very prominent and bulging outwards. A large triangular opening was seen situated below and outside the left nipple, at a distance of 2½ inches below the nipple. The seventh rib was seen traversing the opening, which was half an inch across. The lower margin of the rib was roughened, and the roughening extended behind, a little within the thorax.

On removing the sternum the heart was seen to be un-

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covered and raised above the normal position. The mesosternal line so divided the heart, that a portion of the right ventricle (half an inch in extent) was situated to the right of the line, the rest being on the left side. The apex of the heart was situated just below the upper margin of the fifth rib, one inch to the right of the left nipple. The base was on a line with the lower margin of the second rib. The heart was a little turned round, so that the right auricle was out of sight. On opening the pericardium a little serum was found in the sac; the heart appeared to be of ordinary size, and was not examined.

The *left* lung was adherent anteriorly, the adhesions being very firm and dense. After certain portions of these had been removed the hand descended into a narrow elongated cavity situated, for the most part, external to the lungs, which was empty and free from odour. It extended in a slanting direction from the lower anterior border of the lung to the level of the third interspace in the axillary region, and then curved down towards the spine, being limited on either side, i.e., above and below, by dense adhesions. At the upper end of this space the lung was apparently excavated, and on a level with the third interspace were two openings, each the size of a finger's breadth, situated side by side, communicating with a cavity in the lung. At the bottom of these was seen lung tissue forming the wall of this part of the pleural sac. Below these openings were well-marked depressions in the pulmonary pleura, due apparently to commencing ulceration, showing the way in which above-mentioned openings were formed. The corresponding portion of the parietal pleura was much roughened.

The lung was very firmly adherent to the diaphragm below, and above, to the thoracic wall, except in the limits indicated above, the adhesions at the middle and posterior regions being extremely thick and almost cartilaginous.

The lung on removal was found to have two ragged cavities, occupying the whole upper lobe; the top one, which was the size of a bantam's egg, communicating with the lower one, of the size of a pigeon's egg, by a pervious bronchial tube. The upper cavity communicated with the pleura by means of the two openings described above. The upper lobe itself was adherent to the lower lobe, and a distinct and elevated line was seen running round the lung, beginning from the inferior border, ascending upwards, passing over

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the openings, and downwards behind. A corresponding distinct ridge with concave edge, the concavity being directed towards the diaphragm, was felt in the interior of the thorax, beginning from the third and fourth ribs and extending upwards and backwards towards the spine, thus forming the exact limits of the pneumothorax above described.

The inferior lobe of the left lung was compressed, of a pale purplish colour, flabby, and soft. Some of the terminal bronchioles were filled with puriform secretion. Behind, 2½ inches above the base, was a large dilated bronchial tube much stained with purple sanious fluid. The bronchi were all stained in the same manner, and were generally dilated. The pulmonary artery was found at the root of the left lung plugged by a grumous mottled pinkish clot, adherent by its upper portion to the wall of the vessel. The bronchial arteries were healthy. The glands were enlarged and reddened.

The *right* lung was generally adherent, except a small portion behind. The pulmonary artery of this side was healthy. The upper lobe was enlarged and stained at its lower part with a great patch of purple sanious fluid, similar in colour to the stain of the bronchial tubes, which extended across the upper part of the lung to the periphery. A few bronchioles were seen plugged with puriform material, and there were a few very small grey tubercles. The rest of the lung was in a fairly healthy condition.

Remarks.—The succession of pathological events in this case seem to have been as follows:—Right pleurisy followed by adhesions and retraction of the side in 1872. Left pleurisy with limited effusion in January, 1877, followed by absorption, but leaving behind a large number of dense adhesions, the boundaries of the empyema of a later date. Catarrhal pneumonia of both apices in March, 1877, with subsequent excavation of the upper lobe of the left lung, and temporary quiescence. In December, 1877, left empyema opening into the cavity and discharging through the bronchi.

From the pulmonary fistulæ being insufficient to allow free discharge, the matter was retained, became fœtid, and gave rise to septicæmia, diarrhœa, and to further ulcerative changes in the lung, resulting in enlargement of the cavity and of the fistulæ themselves, the process of ulceration continuing not only through the winter at Cannes, but up to June, 1878, as evidenced by Dr. Marcet's and my own examinations, until the operation, by giving free vent at a

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low level, entirely changed the face of affairs, and converted an acute ulcerative empyema into a chronic pneumothorax. My reasons for concluding that the empyema worked its way into the lung, and not that a pulmonary abscess burst into the pleura, were: 1st, the post-mortem proof of commencing ulceration of the pleura in the neighbourhood of the fistulæ; and 2nd, the absence of distinct signs of pneumothorax previous to the operation, owing to the pleura being tolerably full of fluid.

After the operation, shrinking of the chest wall and change in the position of the organs took place, the heart became more uncovered, and its apex was raised, the left lung was more retracted, and the diaphragm was drawn up.

The œdema which occurred previous to death was probably due to plugging of the internal saphena vein, which is not uncommon in slowly dying cases from phthisis, and death seems to have been precipitated by thrombosis of the pulmonary artery, though, owing to the heart not being examined, it is impossible to say what the exact state of the right side valves were.

The case is very instructive, as showing the great difficulty in diagnosing between a basic cavity and a limited pneumothorax; for, though no less than four physicians of considerable experience in auscultation carefully examined the patient, and although the possibility of pneumothorax was discussed, we all inclined to the 'basic cavity' explanation. Even Mr. Erichsen, at the time of the operation, thought from the thickness and toughness of the tissue he had to cut through to reach the pus, that he was dividing fibroid lung, and not only thickened pleura.

Remembering the former attacks of pleurisy, I did not hesitate to conclude that the greater part of the left lung was adherent, and the presence of a considerable amount of lung elastic tissue in the expectoration for a period of several months, seemed to point more to lung-excavation than to anything else.

The explanation of the physical signs not distinctly indicating a diagnosis of pneumothorax is to be found partly in the large size of the openings in the pulmonary pleura, giving rise to amphoric respiration, and not to entire absence of breath sound as is usual in such cases, and partly to the curious shape of the portion of the pleural sac left free from adhesions, which formed an impenetrable barrier all around. Hence the amphoric sounds were loud and re-

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markably localised. We must bear in mind that the physical phenomena presented by a large superficial cavity in a fibroid lung with adherent pleura, are identical with those of a limited pneumothorax, provided the entrance of air is tolerably free. Even the difference of percussion after expectoration, noted in the above case, may be present if the cavity* is large, and, from the inelasticity of its walls, difficult to empty.

The expectoration, too, before the operation, and both expectoration and discharge after its performance, presented more the character of the secretion of dilated bronchi or cavities, than of an empyema, and it is probable that much, that passed through the tube, drained from the cavity above, gliding along the inclined plane of the raised diaphragm, the position of the opening preventing any accumulation of fluid in the lower part of the pleura.

After the operation, the pressure of fluid being removed, the signs of pneumothorax became very evident.

The operation itself, though attended at the time with most troublesome cutaneous emphysema, may be considered a complete success, and the thoroughness with which it was carried out reflects the highest credit on Mr. Erichsen, who, both at the time of the operation and at the subsequent consultations, displayed a fertility of resource which was as useful, as his hopefulness was reassuring, to both the patient and myself.

I may also express my obligations to Dr. Andrew Clark for the time and trouble he bestowed on the consultations, and to Dr. J. E. Pollock, who took charge of the patient in my absence, for his assiduous attention and for the careful notes he kept.

The results of the operation may be thus summed up:—

1st. In the cessation of fœtor, and reduction in amount of discharge.

2nd. Diminution of cough and expectoration.

3rd. Arrest of ulcerative process, as shown by absence of lung tissue from expectoration and discharge.

4th. Reduction in temperature, and in rates of pulse and respiration.

5th. Improvement of appetite and strength, and prolongation of life, under tolerable circumstances, for nearly seven months.

* In the discussion following this paper, Dr. Bristowe cited a case of large cavity, where there was distinct difference in percussion sound before and after expectoration.

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XXX.—*A Case of Gangrene of the Lung treated by Incision.* By W. CAYLEY, M.D. *Read March* 14, 1879.

CHARLES HENNEL, æt. 40, a packer, was admitted into the Middlesex Hospital under my care on December 30, 1878.

There was no history of phthisis in the patient's family. He himself was of temperate habits, and had been married twenty years. He had had five children, four of whom were alive and well, one was still-born. He had always enjoyed good health, and had never suffered from cough or hæmoptysis, but during the last twelve months he had been getting thinner.

Five weeks before his admission he stated that he caught cold, he coughed and spat and had pain in the chest, and lost flesh and strength; but being very busy he continued at his work for three weeks, when he was compelled to lie up. His wife now noticed that his breath and expectoration were becoming fœtid. He became very weak, sweated profusely at night and lost flesh rapidly, and the expectoration became very abundant, but he never spat any blood.

State on admission.—Pulse 114, very weak and compressible, respirations 28, laboured, temperature 102°.

Patient had the aspect of a man in the last stage of phthisis. He was extremely emaciated, very anæmic, fingers clubbed, countenance sunken and anxious. He had a frequent short cough, and expectorated greyish-brown, somewhat opaque viscid puriform mucus, which had a horribly fœtid gangrenous odour, as also had his breath. He complained of severe pain on the left side on coughing and breathing.

On percussion there was absolute dulness at the base of the left lung as high as the eighth dorsal spine, about the level of the angle of the scapula; the dulness extended forwards at the same level into the lower part of the axilla. Over the dull space the breath sounds were very feeble, and the expiration tubular, the vocal resonance and vibration were much diminished. In the axillary region a few moist râles were audible, no abnormal signs were noticed over the upper lobe or on the right side. The apex of the heart was beating in the usual position, and the sounds were normal.

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It was clear from the patient's symptoms that there was gangrene of the lower lobe of the left lung, though the distinctive signs of a cavity, as bubbling crepitation, amphoric or cavernous breathing, were absent. This was probably due to the cavity being quite full, and not communicating very freely with the bronchial tubes.

The patient's condition was such that it was evident he would very soon sink unless something were done for his relief. His distress, moreover, was very great from the constant cough and horribly fœtid expectoration. I therefore determined to have an incision made into the cavity without delay, and a drainage tube inserted; but as a precautionary proceeding I thought it prudent first to introduce a fine trocar to ascertain the positive existence and exact seat of the presumed cavity. Accordingly, at my request, Mr. Lawson introduced a fine trocar and canula into the chest in the ninth intercostal space in a line with the angle of the scapula, to the depth of about 3 inches. An aspirating syringe was then attached, and a few drops of pus, with the same gangrenous odour as the patient's expectoration, were sucked out. On withdrawing the canula the last two inches were found blackened by sulphuretted hydrogen. A little emphysema of the cellular tissue round the puncture followed, showing that the lung had been pierced. The patient was now put under the influence of a mixture of chloroform and ether, and Mr. Lawson made an incision of 3 inches in length in the intercostal space in the line of the angle of the scapula, and continued it in depth till the cavity was reached, when about 5 or 6 ounces of horribly offensive pus gushed out, together with several fragments of gangrenous lung the size of the end of a finger. A large-sized drainage tube was then introduced. Some troublesome hæmorrhage then took place from a small branch of the intercostal artery, but it ceased after the introduction of the drainage tube.

He was ordered 5 grains of quinine every 4 hours, 12 ounces of brandy daily, and 20 minims of laudanum to be taken at night.

The patient slept for some time after the operation. He then complained of much pain at the seat of the incision, and had urgent dyspnœa. At 7 P.M. his pulse was 112; respiration 42; temperature 103·8°. At 9 he was given the opium, after which his symptoms were much relieved, and he slept for several hours.

Dec. 31, at 7 A.M., his temperature rose to 104·2°. It

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then rapidly fell, and at 11 A.M. was 101·8°, and at 5 P.M. 98·8°. The patient to-day expresses himself as much relieved, the cough and expectoration have almost ceased, and he is free from pain. There had been a considerable discharge of stinking pus through the drainage tube.

The cavity was washed out with diluted Condy's Fluid by means of an irrigator. In addition to a quantity of fœtid pus, several fragments of gangrenous lung came out through the opening. These were examined microscopically. The urine was examined and found to be free from albumen, specific gravity 1027. In the afternoon he sweated profusely. At 9.30 P.M. pulse was 120, of better quality; respiration 36; temperature 99·2°. The cavity was again washed out as before, and this proceeding was afterwards repeated twice daily. He was given 15 minims of laudanum. Washing out the cavity caused on each occasion a violent fit of coughing.

Jan. 1, 9 A.M.—Pulse 108; respiration 42; temperature 100·8°; slept well during the night; takes abundance of nourishment; very little cough or expectoration, which is much less offensive; character of discharge unaltered, but to-day there were no fragments of lung tissue in it; patient seems more prostrate, and in the afternoon wandered a good deal. At 9 P.M.—Pulse 108; respiration 48; temperature 102·3°.

2, 9 A.M.—Pulse 110; respiration 50; temperature 101·2°; passed a restless night; tongue dry and brown; still takes food well; moist râles are now audible over both lungs. At 9 P.M.—Pulse 116; respiration 42; temperature 100·2°.

3, 9 A.M.—Pulse 130; respiration 44; temperature 100·8°; slept well after taking 20 minims of laudanum; complains of dyspnœa; discharge from the wound presents the same characters, but breath and expectoration, which is very scanty, not offensive.

4.—Pulse 120; respiration 36; temperature 100·4°; tongue dry and brown; skin perspiring; mind wandering; loud mucous râles audible over chest. At 5 P.M. he died.

Post-mortem examination.—The body was extremely emaciated; in the 9th intercostal space at the back on the left side there was an incision 3 inches in length leading into the cavity of the thorax.

The lower lobe of the left lung was much diminished in size, and solidified. It was everywhere firmly united to the

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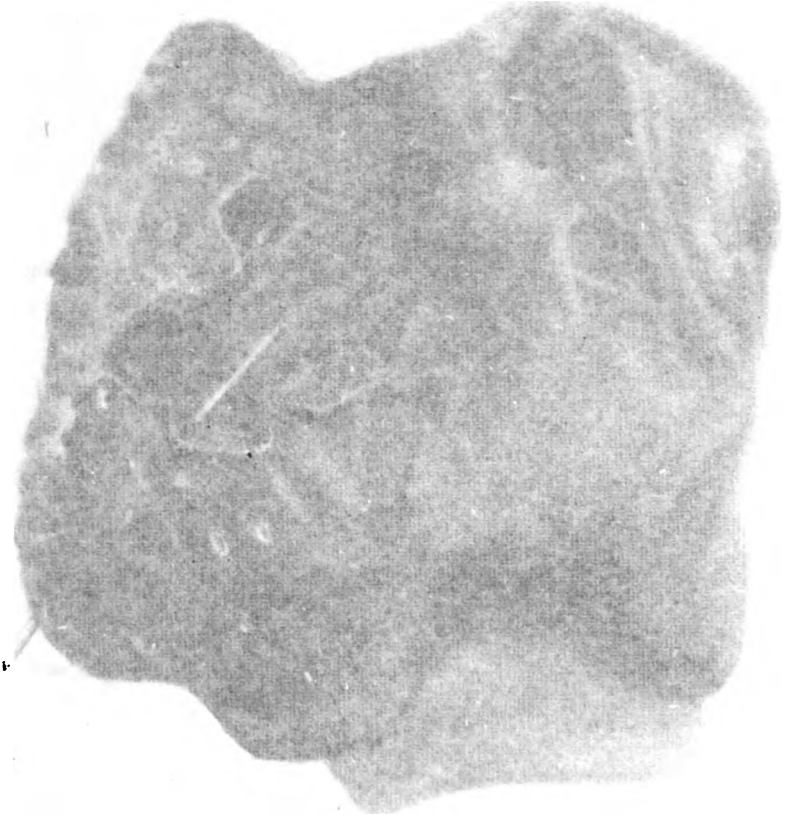

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Dr Cayley's case of Gangrene of the Lung.

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Dr. Cayley's case of Gangrene of the Lung.

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thoracic walls by old fibrous adhesions. On making an incision into it the central part of the lobe was found to be occupied by a large irregular cavity, situated, where most superficial, at a depth of about an inch and a half from the pulmonary surface. Leading into it was an oblique incision an inch in length, corresponding to the incision through the integuments and intercostal space. The bounding wall of the cavity was in part ragged, black in colour, with shreds of gangrenous lung hanging from it. Over a great part of the cavity it was smooth, of a yellow colour, and formed a distinct limiting membrane. No large bronchi appeared to open directly into the cavity, and water poured into the trachea did not flow very freely into it. In the extreme base of the lung was another small cavity, the size of a pea, filled with pus. The pulmonary tissue of the lower lobe was granular on section, of a reddish colour and rather tough consistence. The upper lobe was emphysematous in front, and its depending parts almost solid from œdema.

There were numerous fibrous bands of adhesion between the right lung and the thoracic walls. The anterior part of the lung was very emphysematous, and the posterior part showed great hypostatic congestion and œdema.

The apex of the lung was much puckered, and here in the posterior part there was a small cavity, the size of a small walnut, half filled with an opaque, yellow, friable, cheesy mass. It also contained a little fœtid brown fluid. The cavity had tough fibrous walls, and the lung round it was puckered and condensed. Several tough fibrous nodules were scattered through the rest of the upper lobe, but there were no recent tubercular deposits; and in the lower part of the upper lobe, near the posterior surface, was another small cavity the size of a cherry stone. The bronchial tubes on both sides contained much frothy mucus, and on the left side their lining membrane was intensely reddened.

The kidneys were granular and somewhat contracted. The other organs were normal.

The accompanying drawing and preparations show the condition of the parts (see plate iii.)

Remarks.—The condition of this patient when he came under treatment was such that little hope could be entertained of doing more than relieve his most distressing symptoms; but the treatment employed appears to me to be the one most likely to be successful in gangrene of the lung where the part of the lung affected is accessible to surgical

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interference. When there is a quantity of stinking pus and gangrenous tissue pent up in the interior of the lung and only incompletely evacuated, to the patient's great distress, by coughing, there can, I think, be no doubt but that, if possible, a free opening should be made and vent given to the putrefying matters. If the lower lobe be the part affected, the present case, I think, shows that this may be done without either danger or difficulty, and the result will, at all events, be the complete relief of the most distressing symptoms; and, if the patient be not too far reduced, I do not see why recovery should not take place.

The cause of the gangrene was, I presume, a low form of pneumonia attacking a man of bad constitution. The post-mortem examination showed that he must have suffered from previous pulmonary disease, though he denied having had any of the usual symptoms. The granular condition of the kidneys was also latent, as the urine, which was repeatedly examined, was of high specific gravity and free from albumen.

XXXI.—*A Case of Thickening of the Cranial Bones in an Infant, due to Congenital Syphilis.* By Robert Bridges, M.B. *Read March* 14, 1879.

CHARLOTTE C. was brought as an out-patient to the Children's Hospital, Great Ormond Street, on Jan. 10, 1879. She was then 18 months old. She was pale and thin, with a watery complexion, suggesting anasarca, which was never found. There were slight signs of rickets, the ribs being a little beaded, and their lower cartilages somewhat sunken. She had never been able to stand or walk. The state of the head is described below. There was no visceral disease discovered, but a slight enlargement of the spleen. The child had no rash, and did not snuffle; nor was there any history of either of these symptoms ever having been present. There was some alteration of the natural quality of the voice.

It was stated that she had been a healthy child up to vaccination, which was followed by an erysipelas of the head and face; but this began with otorrhœa. There had been no discharge from the ear for the last month, and none was ob-

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served while she was under treatment. When one year old she had measles, whooping cough and varicella.

Description of the head.—The size and general shape (except as modified by the tumours) natural. The largest circumference above the brows, 19—19½ inches. Hair natural. Anterior fontanelle open, extreme measurement of width of unclosed opening 1½ inch. Venous channels marked in the scalp. The cranium presents four symmetrical prominences, two on each side. These are larger on the left side than on the right: two are on the top of the head, and there is one on each side. They are nearly circular, their diameter being about 1¼ inch, and their prominence greatest at the centre. They look like periosteal nodes, and give an impression of an elevation of at least a quarter of an inch.

Those on the top of the head are confined to the parietal bone, being posterior and internal to the centre of ossification. They do not merge with each other across the middle line, the sagittal suture being apparently at its proper level between them. Behind they do not extend so far as the lambdoid suture. This gives the head an unnatural flattening on the top.

Those on the sides of the head are also chiefly on the parietal bones. They are situated just above the ear, and apparently involve the upper part of the squamous bone and the intervening suture. Their diameter is longer from before backwards than from above downwards, and there is an imperfect division of the oval swelling into two circles by a central depression, as if two tumours had met and merged together. Nothing like cranial tabes was found by pressure on any part of the head.

The swellings had been observed by the mother for two months, and seemed to be increasing. They were so remarkable that the one on the left side had been poulticed.

Family history.—The father, 19 years ago, was treated at Gray's Inn Road Hospital for a chancre; had no bubo, but 'a sore and a discharge.' No secondary rash, nor ever any further symptom which attracted his attention. Had been married for nine years. Wife has had four children; none of them still-born; no miscarriages. All of them said to be healthy; none ever taken to a hospital. I saw the eldest, aged eight years, a fine-looking boy; his upper front teeth very unusually worn down in a straight line, but with no pathological sign about him that I could discover.

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Remarks.—This case is shown to the Society as a very well-marked example of a disease which has only lately been recognised as syphilitic. Throughout, I have assumed that it is of this nature; but since, beyond the clear history of the father's infection and the affection of the child's larynx and spleen, there is no other evidence of syphilis than what the disease itself affords; the unusual size of the swellings and their position is of diagnostic value. The upper posterior part of the parietal bone seems to be a common seat for this disease, and the affection of two contiguous bones (as was seen in the lateral swellings), without respect to their natural divisions, one of its most marked characteristics. The disease has been also observed to show a tendency to avoid the centres of ossification.

My colleague, Dr. Barlow, who first acquainted me with the nature of these tumours, saw the case with me several times, and permits me to add his agreement with the diagnosis. The disease is, I should say, not uncommon; and I have at present more than one case under treatment.

(*Note.*)—*Progress of the disease up to June*, 1879.—Throughout treatment the child took cod-liver oil. In addition to this it had, at first, iodide of potassium in doses of two grains three times a day. On March 4, a mercurial treatment, by grey powder, was substituted. No decided effect, except a coryza, seemed to follow the iodine treatment; but there was a general gradual improvement, which seemed to be hastened by the mercury. The beading of the ribs became much less marked; in May the child began to crawl and set her feet to the ground. The voice became quite natural, and the venous channels and fontanelle began to close up. The separation of the lateral swellings into two became less marked. The general result was satisfactory. An attempt to take a cast of the head was unsuccessful. Examples of this disease may be seen in the museums of the Hospital for Sick Children and the College of Surgeons, to which they have been presented by M. Parrot, who was the first to call attention to the syphilitic nature of this disease of the bones.

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XXXII.—*Foreign Body (end of a silver Catheter) in the Bladder—Extracted by External Urethrotomy—Recovery.* By CHRISTOPHER HEATH. *Read March* 28, 1879.

J. S., æt. 71, was admitted into University College Hospital, August 2, 1878, with the following history. Patient has been a healthy man up to six years ago, when he began to have trouble with his water from an enlarged prostate. Four years ago he had complete retention of urine, and since then has been obliged to draw off his water with a catheter. On the evening of August 2, 1878, patient was in a hurry, and instead of using the gum elastic instrument he was in the habit of passing, used an old silver catheter the end of which had previously been broken off and soldered on again. As he was withdrawing this instrument (No. 10) from the bladder he felt a snap, and found that the end, ¾ inch in length, was left behind. He at once came to the hospital, and soon after admission Mr. Heath passed a Weiss's lithotrite and caught and brought away the extreme end of the catheter, including the eye.

August 3.—Mr. Heath again introduced the lithotrite this morning, but failed to extract the remaining piece. The urethral forceps were then used, but with no better result. Hot fomentations were applied to the abdomen.

5.—Mr. Heath used Fergusson's lithotrite and tried to break up the fragment, and afterwards used the urethral forceps, but with no better result.

6.—Temp. 101·7°. Great tenderness along urethra, and frequency of micturition. No rigors.

7.—At 2 P.M., patient being under the influence of ether, Mr. Heath performed external urethrotomy. After making the incision through the membranous portion of the urethra, Mr. Heath, with a pair of polypus forceps, removed a piece of the catheter which was impacted in the bulbous part of the urethra; and afterwards passing the forceps into the bladder without dilating the prostate, seized and removed the missing fragment, which weighed 25 grains, and measured 1⅜ inches in length, and ¼ inch in circumference. Patient was put to bed and a morphia suppository was given. Urine before operation alkaline, sp. gr. 1020, albumen ⅔.

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8.—Patient passed a good night. Temp. 101·2°. Catheter has been used twice to draw off his urine.

9.—Temp. at 10 A.M. 102·3°. Tongue dry and furred. Urine drawn off by catheter.

12.—Patient has improved. Temp. 99·2°. Has some pain above the pubes. Urine drawn off three times a day.

15.—Patient continues to improve. Tongue fairly clean; bowels regular; less pain over pubes. No. 11 gum elastic catheter tied in.

18.—The catheter is still in. No pain above pubes.

25.—Catheter still tied in. Temp. 98·4°. For the last few days has had tenderness over left epididymis. The urethral wound is granulating healthily and contracting.

28.—Catheter removed to clean it. Urine alkaline, sp. gr. 1020, no albumen.

Sept. 2.—Temp. 103°. Pulse 108. No rigors. After this the catheter was only tied in at night, the patient not being able to pass an instrument himself owing to a troublesome false passage; the urine was drawn off regularly through the day.

9.—Catheter used as last stated. Has had occasional rigors. Urine alkaline, sp. gr. 1020, a trace of albumen.

25.—Condition of patient's bladder much the same. He got up to dinner to-day.

27.—Was discharged.

Remarks.—Cases of elastic or gutta-percha catheters broken into the bladder are by no means uncommon, and I have myself on three occasions successfully withdrawn pieces of elastic catheters with the lithotrite. A silver catheter has rarely, I believe, been broken so as to leave a portion behind, but foreign bodies equally difficult to deal with have been accidentally or purposely introduced into the bladder. I experienced no difficulty in seizing the foreign body with the lithotrite, but was unable to withdraw it without running the risk of lacerating the urethra, and I therefore preferred to incise the urethra and withdraw the foreign body through the perinæum. Mr. Rose has recently recorded a case in which he successfully removed a piece of tobacco-pipe from the bladder with the lithotrite, but that body, though as brittle probably as the catheter, did not tend to leave fragments behind in its passage.

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XXXIII.—*A Case of Severe Traumatic Meningitis treated in the stage of Coma by Cold Douche for 2½ hours—Recovery.* By C. B. KEETLEY. *Read March* 28, 1879.

C. G., æt. 30, a groom, was thrown from a horse into a ditch. When picked up he was insensible, but he recovered consciousness in five minutes.

On admission into the West London Hospital he was quite sensible though somewhat irritable. There was a fluctuating tumour just behind the left parietal eminence, about two inches in diameter. The accident happened about 5 P.M. About 6.30 A.M., after passing a fairly good night, he had an epileptiform seizure, more marked on the left than the right side of the body. After this he became restless, trying to get out of bed and constantly picking at the clothes. During the whole of the day he had fits at intervals of about half an hour, and, towards night, became so violent that he was put into the straitjacket. He refused all nourishment, and occasionally vomited. He passed both urine and fæces in bed. The pupils were equal. The head, during the fits, inclined to the left side. The eyes were continually turned in the same direction.

On making pressure on the upper margin of the left trapezius, the patient moaned uneasily, and the muscle contracted violently. No bruise was visible there.

On the *third day* his condition remained the same, the fits being somewhat less frequent.

On the *fourth day* he had a violent seizure, and, for the first time, the *right* side of the body became affected in a marked degree. On the subsidence of the attack, the right arm and leg were apparently paralysed. (The temperature at this time was 100°, the pulse 80.) In the attacks subsequent to this the right side only was affected. Towards night he became conscious, and expressed a desire for food. He no longer passed his motions in bed.

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On the *fifth day* the attacks came on about every two or three hours. His appearance was now that of a man under the influence of opium, his face heavy and leaden, his pupils contracted. Pulse soft, and about 60; temperature 100°.

On the *sixth day* the temperature rose to 101°, and the pulse to 120, and he was in a state of *perfect coma*. The head and eyes were still turned towards the left.

Free cold douching was applied to the head. After about fifteen minutes' treatment the temperature fell to 100°, the pulse to 80. At the end of 2½ hours the patient was becoming somewhat cyanotic. The douche was discontinued, the temperature being 99°, and the pulse 70. He was now able to answer questions put to him. During the night he got out of bed and walked a few yards. His face wore a fatuous smile, and his manner was childish. No pain. Hæmatoma nearly absorbed.

Henceforward he continued to improve, both mentally and physically.

The *treatment* before the douche had been—perfect rest, quiet, low diet, high pillows, ice-bag to head, and a dose of haustus sennæ co. on the night of admission.

Remarks.—The interesting features of this case are, 1st, the treatment by freely applied cold douche, and its happy and quick result; 2nd, the pathological and diagnostic aspect of the case, which may with some reason be thus interpreted.

The prime injury received by the man was very probably a fracture of the posterior fossa of the base of the skull, for he fell from a considerable height upon a soft substance (having been thrown from the back of a horse into the bottom of a ditch), and the hæmatoma showed that he pitched upon a part of his head, a heavy blow upon which is likely to cause fracture of the posterior fossa. Moreover, in a case carefully tended from the first, such severe inflammatory symptoms are a reasonable proof of the original injury having been something more than a slight contusion. There was no discharge from the ears, or any other special indication of fracture of the middle fossa.

The epileptiform seizures, which first affected the left side chiefly, were probably reflex and due to irritation of the nerves of the dura mater of the side of the head injured. When these convulsions attacked the right side and paralysis appeared simultaneously, inflammation had probably arisen in the arachnoid and even in the surface of the brain

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itself. The conjugate deviation of the eyes and head to the left was probably also due to irritation of the nerves of the dura mater of the same side (the side injured). Much light is thrown on cases of this kind by a very interesting paper published in 'Brain,' Part I., 1878, and entitled 'On the Rôle of the Dura Mater and its Nerves in Cerebral Traumatism,' by Duret. The same number contains also an analysis of one volume of Duret's book by Dr. Ferrier, to whose aid in explaining this case I am much indebted.

In connection with the spasms of the left trapezius, it may be remembered that Rochefontaine observed that irritation of the dura mater in the posterior fossa causes spasms of the muscles of the back of the neck. The superficial encephalitis may or may not have spread inwards from the dura mater, and the immediate source of irritation may, of course, have been a clot or an edge of bone.

The only effect of the douche which could be considered in the least alarming was the slight blueness of the lips; not a very surprising thing considering that a large stream of cold water had been flowing over his head for 2½ hours. Was this symptom much more serious in this case than blue lips and fingers are in bathers after too long an immersion in the sea? But, whether dangerous or not, it was readily recognised, and it did not appear till the douche had had time to complete its good work.

The method of application may be thus described:—The patient was placed diagonally in the bed, with his head over the edge and suspended in a stirrup of wide bandage fixed to the patient's 'swing-chain and handle.'

A Mackintosh cloth was pinned round his neck and pressed down at one corner into a gutter to lead the water into a bucket. A large footbath, full of cold water, was placed on the top of two patients' lockers. A syphon was made of a wide india-rubber tube of the kind used as a tourniquet after the application of Esmarch's bandage. In order to keep open the curve in the india-rubber tube, it was lashed to a skewer bent into a wide curve. This improvised syphon was then hooked over the edge of the footbath, while its lower end was tied to the bandage-sling which sustained the patient's head, in such a manner that the stream of water was directed upon his forehead.

But these contrivances were only employed in the last two hours of the douche. The first half hour was occupied in pouring water by hand out of two ewers, the nurse filling

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one whilst the other was being emptied. Altogether, about forty gallons of water were poured over the patient's head.

The report of this case is by Mr. W. H. Brown, and for assistance in managing it I have to thank that gentleman and Mr. Mortimer, both House Surgeons to the West London Hospital.

XXXIV.—*A Case of Cystotomy.* By W. F. Teevan. *Read March* 28, 1879.

GEORGE T., a wine cooper, æt. 44, was admitted, under my care, into St. Peter's Hospital, on June 30, 1875, suffering from stone in the bladder, and cystitis. He had been troubled for two years; his urine was a mass of muco-pus, and, to use his own expression, 'like a jelly.' The stone measured 2 inches by 1¾ inches, and was phosphatic. Emboldened by the success I had had in several cases where the calculi were nearly as large as this one, I determined to perform lithotrity, for I had been trying gradually to find out to what extent it might be pushed compatibly with obtaining a good result. I completely removed the calculus in twenty-six sittings, each of about one minute, and although the patient was materially benefited, he was by no means in a satisfactory condition; for the chronic cystitis which existed before the operation continued afterwards, and although the patient left the hospital and could take a long walk, he was unable to work, on account of the continuous pain from which he suffered at the neck of the bladder and in the rectum. His urine was slightly offensive, and contained a considerable amount of muco-pus. I accordingly re-admitted the patient, and for months patiently and persistingly tried various medicines and injections, without affording him any material benefit.

As I was unable to cure the sufferer, the question of operation presented itself. I knew that Dr. Gouley, of New York, had performed cystotomy in three instances, and cured all the patients, and I determined to perform the operation in the present case. I looked upon the diseased bladder as a suppurating sac, and considered that, if I kept open the incision for some time, I should be able to feel my way with the future management of the case, and could allow the wound to heal when a decided improvement had taken

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place. I should wish it to be clearly understood that I was certain that not a particle of stone had been left behind. On several occasions the bladder was sounded and examined, with the lithotrite, by Mr. Coulson and myself, and we both gave it as our opinion that there was not a particle of stone left. I sent a specimen of the patient's urine to Dr. Shepherd, who examined it, and he reported there were no renal elements to be found. On September 20, 1876, the patient was put under the influence of gas and ether by Mr. Knott. I opened the membranous urethra in the median line, and incised the prostate and neck of the bladder vertically downwards to the extent of about half an inch. I then explored the bladder with my finger, but could not detect the smallest particle of stone. The bleeding was but slight, and there was but little constitutional disturbance afterwards. On September 22, the temperature rose to 102° F., and the pulse to 110, but from that day they both steadily declined. The wound was kept well open by passing a very large elastic catheter into the bladder every third day. The immediate effect of the operation was to relieve pain; but the urine did not begin to improve till about a fortnight afterwards. The improvement was very slow, and it was not till a month after the operation that I allowed the wound to commence to close. On November 1 the patient was quite water-tight, the urine clear, acid, with a sp. gr. of 1020. The patient left the hospital shortly afterwards, and soon resumed work. Since then he has remained quite well, and worked regularly.

Remarks.—We all know that now and then lithotrity fails to cure the patient; it removes the stone, but not the cystitis which may have existed before the operation and continued after, or may have been caused by the operation itself. Now, what is to be done with such wretched cases, if the ordinary measures to effect a cure have failed? It appears to me that cystotomy is not only justifiable but demanded. I am afraid that most of these cases are left to linger out a miserable existence and die, if no stone can be discovered. Then, again, it is considered, wrongly I think, that the presence of renal disease to any great extent forbids an operation.

I will compare the case I have just related with one which came under my notice in private. A middle-aged gentleman, who was in good health, passed his urine naturally, and had nothing to complain of except when he

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rode on horseback, when he suffered a little pain at the tip of the penis, and passed a few drops of blood. He came to London, and was examined by a distinguished surgeon, who found a small uric acid calculus the size of an almond, which he removed by lithotrity in two sittings. Now mark the transformation. After the operation, the patient could not pass any urine, except with the aid of the catheter; he suffered continual pain, his urine was a mass of blood, mucus and pus, and he became a confirmed invalid confined to his couch. About a year afterwards he sought my advice. I sounded him; there was not a particle of stone to be found in his bladder. I advised him to be cut. After I had given my opinion, he informed me that he had consulted Dr. Roberts, of Manchester, who advised him to be cut, whether he had a stone or not. He afterwards sought the advice of two surgeons in London, who advised him not to be cut. He followed their advice, lingered on in pain for some four months, and died—in my opinion, from the want of an operation.

Here, then, were two cases of chronic cystitis; in each instance lithotrity had been performed, and not a particle of stone was left behind in either case. The one who was cut is alive and well, the other, who was left alone, is dead.

I think, therefore, that in cases of chronic cystitis, whatever may have been the cause of the complaint, we are justified in performing cystotomy if the disease cannot be cured by the ordinary agents or the milk diet. I also consider that the presence of renal disease is no bar to operation. I am never influenced by the microscopical examination of the urine, but base my judgment on the broad facts of the case and the patient's physical condition; and I deem it cowardly to refuse to operate simply because a man has renal disease, even to a serious extent. We do not as yet know what amount of renal disease is compatible with life, supposing that no operation is performed; neither do we know what amount of kidney disease precludes recovery supposing an operation be executed. Under these circumstances we are not justified, I think, in refusing to operate where a human being is suffering greatly, provided there is a reasonable chance of the patient surviving the immediate effects of the operation.

It may be said by some that the stone in the present instance was too large to crush, and that I ought to have cut the patient in the beginning. I would reply, firstly, that

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every lithotritist is a law unto himself; and that, secondly, the present condition of our knowledge does not enable us to fix with mathematical precision the size of that stone which may or may not be crushed. However, if I had to go over the ground again I would perform that combination, which was, I believe, first practised by myself: viz., a complete lithotrity at one sitting, and then immediate extraction of all the fragments through a hole made in the membranous urethra. The special risk attached to crushing large stones is that the patient may become worn out by the frequency of the sittings, and this would be avoided if the operations were performed in one sitting. Then again the mortality attached to external urethrotomy is very small, whilst that after lithotomy is very large. If, therefore, we substitute external urethrotomy for lithotomy we shall greatly reduce the mortality. I believe, however, that this combination has only a limited field open to it; for I very much doubt whether it is possible to crush a stone exceeding two inches in diameter, at one sitting, into pieces small enough to be removed through the prostatic urethra without cutting or lacerating that canal. The combination is peculiarly applicable in cases of phosphatic calculi.

The operation of cystotomy has, through the labours of Willard Parker, Emmett, Mastin, Gouley, and others, been established as a set operation in America for the relief of cases of cystitis which have resisted all ordinary treatment.

XXXV.—*Tracheotomy, as a preliminary to Excision of the Tongue.* By Arthur E. Barker. *Read April 18, 1879.*

SEVERAL years ago it was proposed, I believe, first in Germany, in cases of excision of the tongue where we have reason to fear severe hæmorrhage, that we should first perform tracheotomy or laryngo-tracheotomy, and then, having plugged the pharynx with a sponge, or the top of the larynx with a tampon of lint, proceed to operate without fear of the patient being suffocated with his own blood, chloroform being administered through the tracheal opening. That the danger alluded to is a real one most surgeons who have seen many operations on the tongue will agree. I know myself of two cases where death was apparently due

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(in one certainly so) to hæmorrhage from the tongue into the trachea during an operation on the former. Among those who have practised this method abroad may be mentioned Langenbeck, Schönborn, and Trendelenburg, the latter inventing a special tracheotomy tube for the purpose of closing the windpipe thoroughly during the operation.

One of my objects in introducing this case to the notice of the Society is to learn, if possible, whether any of its members have tried this method of procedure; and, if so, what is their experience of it, and the conclusions they may have drawn from that experience. For I may say that, from what I have learned from this case, I should feel strongly inclined to adopt the same measures in any similar one in the future. But I ought further to say that I have not been able to find that this mode of operation has been up to the present adopted in this country; if it has, the experience of others may be different. At all events, its propriety would seem to be a fair subject for discussion here; and for this purpose I venture to submit the case in which I have thus operated to the notice of the Society. And although I venture further to express my own opinion as to its merits in this particular instance, as no doubt I am bound to do, this is chiefly for the purpose of introducing the subject. For I am conscious that the whole question must be decided by a far wider experience at the hands of others much more competent to judge than myself.

But quite apart from the value of the operation in the first instance, there is another question in regard to it to which I would beg the attention of the Society. It is this: May it not be made a valuable aid in the after treatment of the patient? It appears to me that it may, and I have acted accordingly in dealing with the case before us, and have no reason to regret having done so.*

It is now pretty well known that one of the greatest dangers incidental to extensive operations on the tongue, and indeed on the cavity of the mouth generally, is that the patient is very prone to be attacked by some form of lung affection usually running a rapidly fatal course. I confess to having had a very good opportunity of observing this, and have seen in several cases at the post-mortem examination well-marked pneumonia, and even gangrene of the lung,

* I have since operated on two more cases in a similar way with equally good or perhaps better results.

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only a few days after operation. In this disease there is something more than ordinary lung irritation, and the view is coming now to be pretty generally held that it is produced by the inhalation of the fœtid and irritating emanations from the sloughing surface of the operation wound, the patient being obliged to breathe these day and night incessantly, and almost undiluted. Having seen several lives lost in this way, as I believe (one a patient of my own), it occurred to me that, if tracheotomy were performed before the operation on the tongue, not only would there be no fear of suffocation from hæmorrhage, and one could proceed leisurely to thoroughly dissect out the diseased tissues, but, the patient might be made to breathe fresh warmed air through the tracheal opening alone for several days until the danger of poisoning himself with emanations from sloughs, &c., was no longer imminent. It appeared to me that this could be accomplished by simply plugging the nostrils with cotton wool, covering the mouth also with a thick pad fixed over the lips, and by placing the end of a long drainage tube passing through the floor of the mouth under the chin in a basin of fluid at the bedside. The patient could then breathe neither through the nose, mouth, nor wound, but only by the tracheal opening, while free drainage of the mouth would be provided for by the long tube passing from it down to a basin of Condy's fluid at the bedside. I proposed to myself to keep up this condition of things for some days until the extreme foulness about the floor of the mouth had disappeared and the part was clean, when the plugs of cotton wool could be removed from the nostrils, allowing respiration to take place in the usual manner. Feeling convinced in my own mind that one of the greatest dangers, if not the greatest, in excision of the tongue is that already alluded to—namely, septic pneumonia—I determined on the next occasion on which I should have to excise the tongue to operate and subsequently treat the patient in the way described. In the following case these ideas were put into practice.

W. Evans, æt. 49, admitted into University College Hospital April 2, 1878. A hale man; has enjoyed good health hitherto; has been a smoker, holding the pipe mostly on the left side. He has for some time past noticed a well-marked growth (epitheliomatous) in the anterior part of the tongue, chiefly towards the left side and under surface, the floor of the mouth towards the left canine tooth being but very

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little invaded; the glands beneath the jaw are very slightly indurated.

The patient being placed under chloroform, I performed tracheotomy in the usual way. But it may be remarked here in passing, that under these circumstances the operation is one of the easiest. There is no struggling, as in some cases where we operate for asphyxia; nor turgescence of the veins of the neck, leading to hæmorrhage; nor, indeed, is there any other trouble. The patient is breathing quietly, the windpipe is steady, and there is no need to hurry. Here I simply exposed the trachea in an almost dry wound, transfixed the upper ring with a sharp hook, and then cut round the hook and removed a circular piece in the middle line about a quarter of an inch in diameter, including a bit of the uppermost ring and half the depth of the cricoid cartilage. This little disk came away on the hook, leaving a hole just large enough for an ordinary tracheotomy tube. Into this, Trendelenburg's canula was introduced and then inflated. This produced considerable dyspnœa, as I believe is usually found to be the case when the bag expands for the first time against the tracheal walls. This, however, soon ceased, and the patient breathed tranquilly enough through the canula, through which he was now further chloroformed.

I then performed Syme's operation for removal of the tongue, dividing the soft parts of the lower lip and chin down to the hyoid bone, and then sawing the jaw through in the middle line. Separating the two halves of the latter, it was easy to dissect clear of the diseased mass all round. Then drawing the tongue forward by a whipcord passing through its substance, I cut half through the base of the organ with a scalpel, and then secured the vessels on that side. Another cut through the remaining half finished the operation, the vessels being easily secured. After the jaw had been wired, the edges of the wound in the lip and chin were brought together with hare-lip pins. But in the lowest part of the wound, just above the hyoid bone, there was inserted an ordinary tracheotomy tube, whose flange rested within upon the floor of the mouth, the edges of the wound embracing the tube tightly. This was to serve for thorough drainage, and had attached to it an india-rubber tube leading down to a basin of Condy's fluid at the bedside, into which all the discharges flowed directly from the mouth, especially when the latter was freely washed out with a

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feeding cup. When fluid food was given the tube was simply pinched just below the chin, and little or none escaped.

The man was now put to bed in the semi-recumbent position. Trendelenburg's canula was left *in situ* until the next morning, and was then removed, as it had become somewhat choked with mucus and produced more or less dyspnœa.

I now stopped each nostril with a plug of cotton wool and put a pad over the mouth, which was kept in place by an elastic band passed behind the neck. This pad was lifted off each time the patient was given food with the feeding cup. He could now only breathe through the tracheal wound (which was left without any tube), and could inspire no air from the neighbourhood of the wound in the mouth, which besides was kept well washed and drained in the way before-mentioned. Whenever any mucus collected around the tracheal opening it was wiped out with small sponges wet with a solution of common salt.

The operation was done on April 3. On the 8th it was noticed that the wound in the trachea was not quite clean and that the skin around was a little puffy. The cotton plugs were then removed from the patient's nostrils, and he was allowed to breathe for the first time in the natural way, as I had now but little fear of the air from the mouth. A hot fomentation was placed over the tracheal wound, which soon cleaned again, and on the 11th I began to draw it together with plaster. The pad, however, over the mouth was not removed until a few days later.

On the 12th he sat up by the fire, but in the evening there was some oozing of blood into the mouth which was easily checked with ice. On the 15th there was some further oozing which required perchloride of iron to check it; it seemed to come from the jaw, not from the tongue. He developed an alveolar abscess at this time, which soon healed up after removal of some loose teeth and evacuation of pus into the mouth.

From this time there is nothing particular to notice. The patient left hospital on May 12. The ends of the jaw were not yet united.

The temperature chart shows no particular rise at any time except on one occasion—namely, just as the alveolar abscess was forming, when 103° was registered, but only once.

The respirations ranged from 20 to 24 mostly; on one

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occasion only are they noted as standing at 34. This was when the tracheal wound was not looking clean, April 8.

The patient came to me subsequently on several occasions as an out-patient, while I watched the separation of a small portion of the end of each cut surface of the jaw which had necrosed. The last note I have of his condition is that of Sept. 9:—'Patient came up to-day; the hard swelling under the chin due to the irritation of the sequestrum is quite gone. Exposed bone in mouth on both sides of section of jaw. A sequestrum removed from left side consisting of a portion of cut surface, right end not yet loose. Patient looks well and fat, and there are no traces of enlarged glands so far.' He came from the country once again, looking very hale, and saying he felt very well and could eat plenty. On this occasion the last sequestrum on the right side of the jaw incision was removed. The last I heard of him was from his wife, some time later, who said he was not in good health, but what was the matter with him I could not make out from her. She only said he was not able to eat well, and was weak consequently. He objected to come up to town any more on account of the expense.

I now leave this case in the hands of the Society, in the hope of hearing a free expression of opinion upon the methods employed of averting the dangers incidental to this very grave operation—namely, (1) that of suffocation from hæmorrhage in the first instance; (2) that of leaving a portion of the growth behind from hurry in the operation; and (3), and I venture to think the greatest danger, that of having fatal lung disease set up by the inevitable inhalation of fœtid breath, unless the trachea be opened and left so with proper precautions. It is needless to say that this mode of procedure is applicable to operations on the jaw, &c.

XXXVI.—*Case of rare Vaso-motor Disturbance in the Leg.* By W. Allen Sturge, M.D. *Read April* 18, 1879.

JOSEPH MOODY, æt. 29. The patient was admitted into the Royal Free Hospital in Dec. 1878, suffering from a peculiar vaso-motor disturbance in his right leg.

There was no family history bearing on the case. The father and mother are living, but the father is not very

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strong. A brother died an idiot in Earlswood Asylum. He knows of no history of gout, consumption, or neuroses in the family, except the one case of idiocy mentioned. He is married, with 2 children, one other child died in convulsions. His wife never miscarried. He always had good health before his present illness. He has had gonorrhœa, but appears never to have had syphilis. Always temperate, and for some years past has been a total abstainer.

His present illness began about 4½ years ago. About nine months before the first definite onset he had an attack of pain and swelling in the right great toe, coming on gradually for a week, increased by walking, and associated with a little redness. Rest and the application of an ointment cured him in a few weeks. He then remained free from any trouble in the foot for several months, when he began to feel an irritating warm sensation in the great toe joint, which came on when he began to walk. This sensation was associated with some swelling of the toe. He was quite free from it when lying down at night. Shortly afterwards the warm feeling on exercise extended over the whole foot; which became swelled, scarlet, and hot to the touch. Whenever he walked the foot was subjectively so hot that it felt as though it was in scalding water. For a long time, however, it did not prevent him from working, and even from standing on the leg for 12 or 14 hours a day. There was no lameness and no pain other than this burning. So hot was the foot, both objectively and subjectively, that even in frosty weather he was unable to bear a stocking upon it, and would go about with only a boot.

His occupation has been connected with the sea, fishing, sailing in pleasure yachts, &c.; and he has been in the habit, like other sailors, of standing and working in the water with naked feet for many hours at a stretch, at all seasons of the year. He has often during the colder seasons had his feet almost constantly cold for months together, and they have often been so numbed with cold that for hours at a time he has been unable to feel them. After being thus exposed his feet have often glowed with reaction, but he thinks not more than is usual in such circumstances.

Gradually the tendency to redness and swelling extended half-way up to the knee, and the condition of the foot when he walked became so much worse that about eighteen months after the first onset he gave up work. The foot still remained free from trouble so long as he rested, but the con-

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gestion came on almost directly if he stood on the foot, or if he put the foot near the fire.

Six months before he gave up work, and whilst he was still using the right leg quite as much as the left, he noticed that the calf of the right leg was very decidedly smaller than that of the left, and since that time the difference between the two legs has gone on increasing.

Between two and three years ago a medical man whom he had consulted, thinking that the cause for the condition was to be found in the great toe, where he believed there was some dead bone, amputated the toe; but the patient afterwards learnt that no dead bone was found. The wound became very much inflamed, and was a long time in healing. Since that time the foot has been worse than before, and the redness and heat have extended up the thigh to the buttock. Sometimes the attack begins in the foot and passes upwards. Sometimes it begins in the buttock or knee and goes downwards. He never passes a day without having an attack. The attacks now come on by day and night, irrespective of his hanging the foot down, and last for several hours at a time. In the intervals between the attacks the foot is very cold both subjectively and objectively.

For a few months past he has begun to experience attacks of heat in the left foot and leg. The sensation is accompanied by redness and a little swelling, but to a much less extent than in the right leg. It generally comes on rather before the attack in the right leg, and does not last nearly so long as the latter. He finds that any excitement will bring on the attack very severely. He thinks the leg is better if he has plenty of nourishing food.

In the intervals between the attacks the right foot is of the same size as the left. The tendons are well defined on the dorsum, there being distinct hollows between them. The skin, though permanently somewhat red, is wrinkled as in a healthy foot. The foot feels ordinarily very cold to the hand; but when the attack comes on, it rapidly becomes very hot, beginning at the scar where the toe was amputated. The hollows between the tendons become effaced, and the skin becomes tense and smooth.

Comparative Temperature.—A series of observations was made with Steward's surface thermometer, with the following results:—

Right Foot.—During the attacks the temperature of the foot varied from 91° to 94°; the temperature of the dorsum

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being always a little lower (1 to 1½ degrees) than that of the sole. In the intervals of the attacks, the temperature of the foot was always too low to be registered by the thermometer, which was not arranged for temperatures below 75°.

Left Foot.—After sitting in the neighbourhood of a fire, and when the foot felt to him of a comfortable warmth, but without its having been exposed to the direct heat of the fire, the foot registered 90·4°, and on another occasion 83°.

On another occasion, when he had a little burning sensation in the left foot, the temperature was 91·5°.

After walking for some distance in the street, which had induced a strong burning sensation in the right foot, the thermometer registered 96·8°.

There is extremely marked atrophy of the muscles of the right leg, as indicated by the following measurements :—

	Right.	Left.
Circumference of middle of thigh . . .	14½ in.	16½ in.
Greatest circumference of calf . . .	9¾ „	11 „

There is marked increase in the reflex irritability in the muscles of the right leg: thus, when the sole is lightly tickled a much greater flexion of the foot takes place than on the left side under similar circumstances. If the hand be placed behind the head of the tibia and the leg supported upon it, a moderate clonic spasm in the limb is excited. There is, however, no apparent increase in the tendon reflex of the ligamentum patellæ.

The muscles of the right leg were found on careful investigation to have undergone a marked modification in their electrical reaction. With the induced current it was found that when the rheophores were placed over the muscles themselves, there was a very marked diminution in irritability amounting to as much as four or five divisions in the bar of Stöhrer's battery. This is seen uniformly in all the muscles of the limb. If the rheophores be placed over the nerve-trunk, however, the diminution is much less marked, and does not amount to more than from 1 to 2½ divisions on the bar.

With Voltaic electricity (slow interruption) a similar result was obtained. When the rheophores were placed over the muscles on the right side, no reaction was produced by a strong current of 20 cells (Stöhrer). When the muscles of the left leg were treated in the same way, contraction was produced by 8 cells.

When the rheophores were applied over the nerve-trunk

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contraction was produced on the right side by 8 cells, and on the left side by 6 cells.

General sensibility, sensibility to heat and cold, and the muscular sense were quite unaffected.

This case belongs to a group of which a masterly description has recently been given by Dr. Weir Mitchell, in the 'American Journal of the Medical Sciences' for July, 1878. He narrates five cases which came under his own notice, and quotes seven others from various sources, two of which occurred in the practice of Dr. Graves, and one in that of Sir James Paget, who published the case in the 'St. Bartholomew's Hospital Reports' for 1871. According to Dr. Mitchell, the disease occurs nearly always in the male sex 'after some constitutional disease, or after prolonged physical exertion afoot.' It begins with pain 'in the ball of the foot or of the great toe, or in the heel; and from these parts it extends so as to involve a large portion, or all, of the sole, and to reach the dorsum or even the leg. More often it is felt finally in a limited region of one or both soles, and does not extend beyond these areas. At first it is felt only towards night, and is eased by the night's rest. In the later stages, the pain is throbbing, aching, and burning. In every case and at all stages, the pain is relieved or arrested by the horizontal position and by cold. It is brought on and made worse by standing or walking; and in bad cases by allowing the feet to hang down; while warmth, and of course heavy feet-covers, act in like manner. The sufferer sleeps with uncovered feet, and goes about without stockings in his house, and finds even in winter a light slipper or low shoe comfortable. . . . In the worst cases, when the patient is at rest the limbs are cold and even pale. The flushing which at first seems to be an active condition, accompanied with rise of temperature, in a few minutes becomes passive; that is, the arteries cease to throb, the heat lessens, and there is evidence of lessened oxidation.' My case differs from this description in the fact that some of his most severe attacks come on when he is in the recumbent position.

Dr. Mitchell says that two of his cases were associated with evident spinal symptoms, such as atrophy of muscles, tightness round the waist, and partial loss of power. In the case I have just read there was marked muscular atrophy, which the patient stated to have come on before he gave up using the limb.

Dr. Mitchell mentions that in one of his cases the attack

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of heat and redness, which had at first been confined to the feet, at a later stage extended to the hands also. This is in accordance with the fact met with in my case, that the attacks which were for a long time confined to the right leg are now extending to the left.

Dr. Mitchell states that these cases are 'rarely amenable to treatment. They are aided for a time by cold and by rest, but usually they remain unchanged for years, or else, in rare instances, become gradually worse.' The treatment I have adopted has been rest with the leg raised, tonics, and the application of atropine ointment diluted with an equal quantity of lard. The ointment appears to have had a very decided influence in checking the attacks. He had himself adopted a system of entire rest before he came under my observation, but he rarely went twenty-four hours without an attack. He wrote to me towards the end of February to say that he had not had a severe attack for a month. He had at that time been using the ointment for rather more than two months.

Dr. Mitchell abstains from speculating on the pathology of the affection. I believe I shall be exercising a wise discretion in following the same course. That it is a lesion of the vaso-motor centres there can be no doubt, but until we have rather more knowledge about the physiology of these centres, it would be of little use to talk about their pathological changes. I would, however, throw out the suggestion that the proximate cause in the present case is to be found in the prolonged excitation to which these centres were subjected at those periods when, as the patient says, his feet were numbed and cold for months at a time, as the result of his seafaring occupation. Just as over-exertion of the co-ordinating centres of the hand will in certain cases induce writer's cramp, so a prolonged over-excitation of the vaso-motor centres may be supposed to induce irregular action on their part. It is of interest to note that, in the case narrated by Sir James Paget, the affection was clearly traced to exposure of the lower extremities to repeated shocks of cold.

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XXXVII.—*A Case of Partial Epilepsy, apparently due to a Lesion of one of the Vaso-motor Centres of the Brain.*

By W. Allen Sturge, M.D. *Read April* 18, 1879.

ADA BROOK, æt. 6½. Both father and mother are living and healthy; both are steady; there is no blood-relationship between them. Two other children are living and healthy; three are dead, one by an accident, and the other two, who were twins, in early infancy. The mother never miscarried. The father had an uncle who is said to have died 'out of his mind;' he was not, however, in an asylum, but died in his own house. There is no other history of insanity, and no history of fits in the family. Several members of the father's family are said to have died of consumption.

The patient was born with a very extensive 'mother's mark' on the right side of the head and face. The mark is bounded pretty accurately by the middle line in the upper lip, nose, forehead, scalp, and back of the neck, extending a little beyond the middle line on the chin and on the upper part of the sternum. It extends as low as the third or fourth dorsal vertebra behind, and the second costal cartilage in front. The lips, gums, tongue, roof of mouth, floor of mouth, uvula, and pharynx are all similarly affected, to a greater or less extent, on the right side. There is in addition a patch about the size of the palm of the hand over the left eye, frontal, and temporal regions. The mark is everywhere of a deep purple colour, the colour partially disappearing on firm pressure. All the parts affected are distinctly larger than the corresponding parts on the opposite side.

The right eye is affected in a similar way both in its superficial and deep structures. It is larger than the left; the sclerotic is more vascular than usual, and with the ophthalmoscope it can be seen that the retina and choroid are involved. Mr. Nettleship has kindly examined the patient for me, and he has furnished me with the following most interesting and valuable report:—

'*Measurements relating to the two Eyes* (*only approximate, as she is too restless for anything better*).

'*Palpebral fissure.*—*Right*, 25 mm.; *left*, 22 or 23 mm.

'*Cornea* (trans. diam.).—*Right*, 12 or 13 mm.; *left*, [illegible] mm.

'*Pupil* (trans. diam.).—*Right*, 5 mm.; *left*, 4 mm. Pupils equally active to light.

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'*After atropine.*—The right pupil is rather oval in vertical direction, and more excentric inwards than usual (but atropine may not have acted fully).

'*Vascularity.*—Visible vessels of right eye all larger than those of left; whilst downwards and inwards in front part of ciliary region of right eye is an ill-defined purplish or lilac patch seated in the sclerotic (scleral nævus).

'*Light.*—Cannot be accurately tested.

'*Refraction* (by ophthalmoscope).—*Right*, myopia about $\frac{1}{10}$; *left*, hypermetropia at least $\frac{1}{24}$, and probably more.

'This, therefore, proves the right eye to be really longer than the left, unless the myopia be due to increased convexity of the lens or the cornea; the former is unlikely, and of the latter there is no evidence. The globe is probably too large in all directions, and therefore too long. There is no myopic crescent, i.e., no evidence of bulging localised at the posterior pole of the eye, as is so very common in ordinary myopia.

'*Ophthalmoscope.*—Right disc much redder than left; some of the right retinal veins are very tortuous, chiefly some of the large upward subdivisions: the tortuosity affects certain large branches or parts, and not the whole of any primary division; nor does it go so far as the disc. In the inverted image all the parts look smaller in the right than in the left eye, because of the difference of refraction.

'*Choroid.*—The general colour is very markedly darker and at the same time redder in the right than the left eye. The difference is not what we should expect if it were due to the pigment being more abundant in one eye than the other; it is suggestive of venous or venous and capillary hypertrophy like that on the skin.'

After her birth the child enjoyed good health till she was six months old. She then began to have attacks of twitching in her left side, affecting the face, arm, and leg. The mother describes the fits as lasting for ten or twelve minutes, and consisting of little jerks which occurred every two or three seconds during that period. She had several of these attacks every day. As time went on the attacks became stronger, but the child did not seem to lose consciousness. When she got older her mother found that after the attacks she was weak in the left side, and could not walk so well as at other times. The fits continued to get stronger, the shaking of the left side was more severe, and after a time

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the right side began to be affected also. About eighteen months or two years ago she began to lose consciousness, and now the fits did not recur so often. The twitchings which occurred without loss of consciousness disappeared, and their place was taken by severe fits in which consciousness was lost, and there was very marked convulsion. These fits only occurred about once in every three, four, or six months.

Her mother describes the fits as she now has them as follows:—She first complains of a feeling in the palm of the left hand; the feeling appears to be a sort of painful tingling. She tells her mother a fit is coming on. The sensation in the hand lasts for several minutes, and she then clenches the hand firmly and bends up the arm. Sometimes both hands are clenched. A few seconds afterwards she falls down unconscious, but is not much more convulsed. After the fit is over the child sleeps soundly for some hours.

Sometimes the child tells her mother that she has a fit, but without any outward signs being seen. When asked what she feels, she says that it is a 'funny feeling' in the left hand.

She is troublesome and very restless.

Under the influence of bromide of potassium the patient has considerably improved. She has had fewer fits, and has been less restless.

Remarks.—I have no intention of going into the difficult question of the pathology of port-wine mark. The point to which I wish to call particular attention is the probable relationship between the mark and the fits. It will have been observed that the fits were for a long time very partial, being confined to the left side only, and apparently unattended by loss of consciousness. Now fits of this kind are rare in connection with very young children, and I shall be able to show their significance more easily by saying a few words on the nature of epilepsy. It is becoming more and more certain that the phenomena of an epileptic fit or of an infantile convulsion are due to a liberation of force in an irregular and ungoverned manner in the nerve-cells of some part of the grey matter of the cerebro-spinal system. This irregular liberation of force is very well described under the term, now so commonly used, of 'nerve-discharge.' A nerve-discharge which gives rise to convulsions is evidently due to some instability in those groups of cells where it takes place. This instability may be due to some inherent fault of construction

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(so to speak) of the grey matter, whether from a hereditary tendency to badly-formed nerve-tissues, or as the result of bad conditions in the parent at the times of conception and development, or from other causes. In such a case the tendency is for large tracts of grey matter to be affected in the same way, and for the two sides of the brain to resemble one another more or less in this respect. Hence in these cases of idiopathic epilepsy we usually meet with the severer forms of an epileptic fit, where there is instantaneous loss of consciousness, with little or no warning, accompanied by rigid contraction of nearly every muscle in the body. Sometimes, however, even in cases of widespread tendency to instability of grey matter, some small tract may be more unstable than the rest. In such a case it alone discharges at the beginning of the fit, producing the phenomenon of the warning, which may be mental, sensory, or motor, according to the seat of the discharging tract. Nerve-cells, however, intercommunicate freely with one another by connecting fibres, and when one cell is in action it tends to excite a similar state of activity in those with which it is brought into connection. It can easily be understood, then, that a disturbance such as that which is produced by a sudden and irregular discharge in a group of cells, propagates itself rapidly to neighbouring tracts. These being themselves over-excitable, though to a less extent than those cells where the discharge has begun, an irregular discharge takes place in them, producing the phenomenon of the fit following the warning.

Epileptic fits may, however, be due not only to an idiopathic morbid excitability of grey matter, but grey matter which is in itself quite healthy may be induced to discharge irregularly under the influence of external irritation, such as results, for instance, from the presence of tumours, of masses of fibrous tissue growing down into the cortical substance from the meninges, after attacks of sub-acute or chronic meningitis; or again, from increased blood supply, as in acute meningitis. In such cases the discharge of nerve-force is very commonly confined at first to a small area. If the exciting cause be strictly localised, as in the case of a cerebral tumour, this area will be that which is in immediate contact with the tumour, but if the cause be more uniformly diffused, as in vascular disturbance, the discharge will begin in any part which is normally a little less stable than the rest; for doubtless in many healthy, as well as in many

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epileptic brains, there are regions which are more prone to take on irregular action than others. But a sudden, strong, and irregular discharge taking place in certain cells, must act as a strong excitant to other cells which are in communication with them. At first the passage of this stimulus is to some extent resisted by the intercommunicating fibres which are unused to their new function. We all know how much more easily nerve-stimuli are conducted after frequent repetition than on a first trial. The cells, however, which border the discharging area are as yet healthy, have no tendency to discharge, and are able to resist the rude shocks to which they are subjected. After a certain number of repetitions of the shocks, these cells begin to give way and finally become involved in the nerve-discharge. Hence we frequently find that in the early stages of tumours of the brain where fits are present, these are slight and confined to a very limited part of the body, as, for instance, one side of the face and certain muscles of one arm; and at this stage they are often unaccompanied by loss of consciousness. If consciousness be lost, it is usually after a very prolonged warning which the patient feels to be creeping gradually from one part of his body to another, or gradually passing from mere sensory phenomena to muscular action. As time goes on, however, the fits extend over more ground, and at the same time the warning becomes shorter; that is to say, after every new morbid discharge, not only do the nerve-fibres become more prone to conduct the stimulus, but the internal economy (so to speak) of the nerve-cells is to some extent upset, their condition is interfered with, and they are predisposed to discharge again more easily than before. Hence it is no uncommon thing for patients to say, 'My fits used only to be on one side, but now they are on both;' or still more often, 'I used to know when my fits were coming on, but latterly I have had no warning;' and a friend who sees the fits will often tell us, 'The fits always begin on one side, but after a minute or two the patient struggles on both sides.'

Now everyone knows that, *cæteris paribus*, the grey matter is less stable in children than in adults; where an adult has a rigor, a child has a convulsion. From this it results that it is much rarer for fits to begin slowly in a young child than in an adult, especially where the fits are due to a hereditary instability of nerve-tissue. Whenever in a child partial fits occur, or fits preceded by a considerable warning, they may be taken as indicative of some external morbid influence acting

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on grey matter which is naturally healthy. In the patient I have shown, the fits for a long time were confined to the left side opposite to the port-wine mark; and the mother says that there appeared to be no loss of consciousness until she was three or four years old. They then involved the right side as well, and had become more severe. Even now, however, they begin in the left hand with a sensory warning of considerable duration, and sometimes appear to consist only of a sensation of some kind in that hand. From the nature of the fits, and from their mode of onset, I think there can be no doubt that they are due to some cause external to the nerve-tissue, rather than to an inherent instability of grey matter, and this external cause is in all probability to be found in the presence of a 'port-wine mark' on the surface of the right side of the brain, just as we have found it in the skin, mucous membranes, and retina of that side.

XXXVIII.—*Case of Amputation at the Hip Joint in which the Iliac Arteries were compressed per Rectum.* By A. Pearce Gould, M.S. *Read April* 18, 1879.

THE following case was under my care at the Westminster Hospital, having been sent to me by Mr. Morris, of Edmonton; Mr. Macnamara kindly allowing me to use one of his beds.

W. G., æt. 28, a gardener, stated that in childhood and again eight years ago he had an abscess in his right hip which healed up after discharging for some time. At Christmas, 1877, an abscess formed there again, and burst in two places on the outer side, and discharged profusely and continuously up to his admission on Oct. 26, 1878, other sinuses having formed in the meantime. He had become very anæmic, emaciated and depressed, but was not suffering from hectic. On examination under ether, it was found that in addition to advanced disease of the articulation, the neck of the femur was fractured and gave rough crepitus on moving the limb. All the sinuses were discharging thin, ill-conditioned pus. There was no induration or sign of disease in the pelvis, or in the other organs of the body.

Oct. 30.—I excised the head of the femur through an incision prolonged up from a sinus above the great trochanter. I had some difficulty in getting the detached head out of the

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acetabulum, but accomplished it by means of lion forceps and periosteum scraper. The entire surface of the acetabulum was bare. The wound granulated and at first all promised well, the man became brighter, took his food better and slept soundly. But the old sinuses continued to discharge. I tried to remedy this by securing free drainage, and on three successive occasions I passed drainage tubes in various directions for this purpose. In particular one sinus on the part of the inner side of the thigh continued to discharge thick laudable pus in large quantity in spite of a free dependent opening, and it was ultimately found that pressure over the psoas muscle above Poupart's ligament caused this pus to escape more quickly. At the same time the patient began to suffer from night sweats. On Dec. 4, the thigh became greatly swollen, tense, and œdematous, with dropsy of the foot and leg; the temp. rose to 102° and 103·6° at night; pulse 102, weaker. Two days later on the man was very sick, an abscess burst close to the sinus mentioned above, thigh still greatly swollen. Urine contained a trace of albumen. At a consultation with Mr. Macnamara it was decided that amputation at the hip joint offered the only chance of saving the patient's life.

Up to this time the general treatment had consisted in a liberal diet containing a chop or slice of meat and two eggs every day, but no stimulants. Quinine was given at first, and after a few days sulphide of calcium in doses of gr. $\frac{1}{6}$ every four hours was added, with a view of lessening the suppuration; in this it failed, and it was discontinued on the occurrence of diarrhœa. Then sulphuric acid was given alone as a tonic and antisudorific with apparent benefit. It is worthy of note that the patient's digestive organs were in a very good state, the tongue was clean and moist, his appetite was good, he enjoyed his food, and the bowels acted regularly with the one exception named above.

At 10 A.M. Dec. 7, he had a mutton chop, and at noon half an ounce of brandy in some tea.

Operation.—At 2 P.M. he was put under the influence of ether. Esmarch's bandage was applied from the toes to the middle of the thigh, and the pubes, buttock, and groin were shaved and then well washed with carbolic lotion (1–20). Mr. Davy passed his 'lever' up the rectum for a distance of 9 inches, and by gently raising the handle at once stopped the pulsation in the femoral artery. The limb being held by Mr. Neale, I then amputated it at the hip joint by the

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oval method, beginning the incision at the lower end of the excision wound, carrying the knife lightly across the front of the thigh, but down to the bone on the inner side and behind. After forming the posterior flap, I sank my knife deeply in on the front and removed the limb. Having ligatured the femoral vessels and profunda artery with carbolised silk, and several other vessels with catgut, I washed the flaps and sinuses with carbolic lotion (1–20), and placing a strand of horsehair between the flaps I brought them together by means of three deep and several superficial sutures, and applied a common antiseptic dressing. The man was then removed to a warm bed. All the soft tissues of the thigh were immensely œdematous and infiltrated, the skin and cellular tissue being from an inch to an inch and a half in thickness; serous fluid poured from the parts during their division. I must acknowledge the very able help rendered me by Mr. Macnamara, especially in the arrest of the hæmorrhage from the very numerous smaller vessels.

The patient suffered considerably from shock, and was sick during the next five hours. At 10 P.M. I found him quiet and comfortable, recovering nicely from the collapse, with a warm and moist skin; he had taken some beef-tea, had just passed urine, and only a little serous discharge had oozed through above the dressing; no blood was to be seen. He dozed through the night, and in the morning was quite bright and cheerful, and said he had 'no pain to speak of.' Temp. 100°; pulse 120. Tongue moist and quite clean. The dressing was renewed; the one removed contained a relatively small quantity of bloodstained serum, no clots. The flaps were in accurate apposition—no tension. The urine passed contained excess of urates and a faint trace of albumen. The patient had taken a good quantity of beef-tea and asked to have a chop for dinner. This he had and enjoyed, and afterwards had some sound sleep; no pain. At 10 P.M. he was quite comfortable; no escape of discharge from the dressing. He slept soundly through the night, and woke at 5 A.M. Dec. 9, faint and low, in a profuse sweat, which continued for some hours. At 10 A.M. his pulse was 120, tongue moist and quite clean. Dressing changed; discharge free and good; the lower posterior corner of flap was seen to be sloughing over an area the size of a crownpiece; the superficial suture at this corner was removed. No redness of flaps nor tension. Urine loaded with urates, and dark olive green in colour from carbolic acid; in the 24 hours

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ending at 12 noon he had passed 20 oz. Protective was laid over the wound, and lint soaked in carbolic oil over that. He took a little fish for dinner, and had an ounce of port wine in the afternoon. He was quiet but 'low' all day. In the evening the dressing was renewed and terebene lotion substituted for carbolic oil. He had a very restless night, complaining of pain in the left leg, and passed three loose motions —no mucus or blood in them. At 8 A.M. Dec. 10, he was sick and then became notably worse, very distressed, with hurried respiration, severe pain in left leg and foot. His face was blanched, there was no cyanosis, air entered his chest freely, and he was quite conscious. The left femoral artery was felt pulsating forcibly, the superficial veins of the limb were very distinct, œdema of foot but none of leg or thigh—the whole limb was warm. He gradually became unconscious, and died at 11 A.M., 69 hours after the operation. His tongue was clean and moist up to the time of his death.

Autopsy, 27 hours after death.—Lungs not congested, a little old tubercle at each apex. Heart contained fluid blood on the right side and in the pulmonary artery, and a firm fibrinous coagulum in the left ventricle and aorta. Alimentary canal, liver and brain healthy. Spleen large; on section its dark surface was seen to be mottled towards the centre with lighter red patches. Kidneys pale and swollen. Rectum was carefully examined. No tearing or bruising of the meso-rectum; no sign of injury to the rectum visible from the outside, and on slitting it up the mucous membrane was seen to be intact; about 12 in. from the anus was a small spot of capillary injection.

Arteries.—The aorta, iliac and femoral arteries were removed and carefully examined: there was no sign of laceration or bruising of either their coats or of their cellular sheaths. The cut ends of the right femoral and profunda arteries were closed by firmly adherent clots. The internal circumflex artery was found not to have been cut.

Veins.—A clot filled the right femoral vein and extended up as high as the middle of the external iliac vein. A firm thrombus was also found in the left common iliac vein, just reaching into the mouth of the internal iliac vein, filling the external iliac, the femoral, profunda, popliteal, tibial, peroneal, and internal saphena veins, and every one of the small veins cut across in making the dissection of the larger trunks. Indeed, in dissecting the limb we saw small black points—the cut ends of occluded veins—on every surface. The veins

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were distended opposite each pair of valves. The clot was black in colour and adherent to the vein, which was apparently unaltered. At its upper end the clot was firmer and of a brick-red colour on its circumference. The middle sacral vein was very large and entered the pelvis through the left sacro-sciatic foramen, and, like the vena cava, contained fluid blood.

Stump.—The flaps were united over their whole surface except at posterior outer angle, by a thin layer of soft lymph; no pus: the sinus under Poupart's ligament empty. Slough had not increased in size. Acetabulum entirely covered with granulations. Iliac glands enlarged; matting of tissues around external iliac vessels.

Remarks.—The points to be noted in this case are the following, and they may be dealt with in their order.

1. The nature and course of the disease.
2. The reason for amputation.
3. The method of amputation.
4. The method of arresting hæmorrhage.
5. The use and failure of the antiseptic system.
6. The deep sutures.
7. The thrombosis.

1. *The Nature and Cause of the Disease.*—Morbus coxæ in a strumous individual is so common that I need only allude to two special points presented in this case. The first is the spontaneous fracture of the neck of the femur before admission, which rendered excision of the head of the bone rather more difficult than usual: * and the second is the fact that the acetabulum, which was bare and dry at the time of the excision, rapidly became covered over by granulations after that operation, although only two small fragments of bone were ever noticed to escape with the discharge. The failure of free drainage to secure closure of the sinuses, and the alteration in the nature of the discharge after the excision, are also, perhaps, worthy of note. In reference to the former I ought to add that at the time of the amputation, the upper end of the femur was covered over with fibrous tissue, so that there was no bone disease to perpetuate the discharge.

2. *The Reasons for the Amputation.*—The abstract of the case is so abbreviated that it possibly fails to show these. Excision of the bone and free drainage having failed to stop the discharge; a new inflammation, with great œdema and infiltration and pyrexia, having been lighted up, while

* An instance of this is recorded by Mr. Pick in the 'Lancet,' 1868.

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hectic had gradually developed, and the urine become albuminous; there appeared no hope for the patient's life but in amputation of the limb; and looking at his age, and the good condition of his digestive organs, it was felt that this operation held out some hope.

3. *The Method of Amputation.*—Having previously excised the head of the femur, amputation by the oval method was very readily performed. The advantages it possessed over the flap amputation are obvious and important. The inner side of the thigh was left intact, and was of great use in supporting the heavy posterior flap, and, had the man lived, would have aided in the nutrition of the part. I found post-mortem that I had not severed the internal circumflex vessels, which would have been certainly cut in the ordinary operation. By a very simple calculation I found that by this means I had saved from 18 to 24 square inches of wound surface, and by so much, therefore, did I lessen the shock and the subsequent danger of the operation.* When amputation has to be resorted to after excision, or when the joint is so disorganised that disarticulation has already occurred or is easily accomplished, it will be surely worth while to practise the oval rather than the flap method. Several surgeons have suggested the oval operation, e.g., Cornuau, Malgaige, Belmas, Scoutetten, and Guthrie, and the last named performed it. M. Verneuil also appears to have done so, but he commenced his incision over the femoral artery, and ligatured the main vessels before cutting the deeper structures. In the 'Lancet,' vol. i., 1866, a case of Mr. Lee's is recorded in which he made a longitudinal exploratory incision over the outer side of the hip, and then, on discovering the extent of the disease, he converted it into an oval amputation by carrying the knife round the thigh at the lower end of the longitudinal incision. But this case does not appear to have attracted the attention it deserves, and I have not been able to find any other case in which this method was employed by British surgeons. Mr. Furneaux Jordan has recently published a case ('Lancet,' vol. i., 1879) in which he first enucleated the femur, and then removed the limb by the oval method; and he has favoured me with a note in which he tells me that he operated in the same way on a case some years ago.

4. *The Method of arresting Hæmorrhage.*—The real interest

* Another advantage of this method is the greater ease with which antiseptic dressings can be applied to the stump.

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of this case centres in the use of Mr. Richard Davy's lever. This instrument is described and its use figured in the 'British Medical Journal,' 1878, vol. i. It was first employed by Mr. Davy at the Westminster Hospital in 1877, and next in the case which is the subject of this paper, which was the first time it had been used on an adult.* The lever is a straight cylinder of hard wood, about 2 feet long, most carefully turned and smoothed. Its circumference is 2 in., but at each end it is enlarged for a distance of 3 or 4 in. to a circumference of $2\frac{3}{4}$ in. Previous to its use the rectum must be emptied, and should be free from stricture and ulceration. The lever having been carefully lubricated is passed up the rectum towards the sacral promontory, and then the handle is inclined to the sound side and gently raised until the pulsation in the femoral artery ceases; it is then steadied by being grasped along the inside of the sound thigh. In my case this was most easily accomplished, and the command of the vessels complete. During the incision only the blood lying in the vessels severed was lost; afterwards a small quantity was allowed to escape to enable us to recognise the smaller arteries; but when all the blood in the tray was measured it amounted to less than 3 oz., and in this amount there was of necessity some sawdust and serum. There was no evidence during life or after death that the lever caused any injury of the rectum, peritoneum, or vessels. The lever has since been used by Mr. H. Marsh, by Mr. Davy in a case of iliac aneurism, where pressure was kept up for 20 min., and also in a case of amputation of the hip by Mr. Armstrong, of Greenwich, and again by Mr. Cadge, of Norwich, in a similar case. Mr. Cadge writes: 'The lever answers admirably, and I was surprised to see how easily and perfectly and with how little pressure the common iliac was controlled.' In all six of these cases its use has been easy, efficient, and without ill result.† The objections that may be urged against it are (1) that it is a coarse proceeding; (2) that it may stretch or tear the rectum or meso-rectum; and (3) that in all cases the common iliac vein will be compressed as well as the artery. To this it may be replied that in the six recorded

* The lever is made by Messrs. Wright, New Bond Street.

† Mr. R. Davy informs me that up to this date (July 29, 1879), the lever has been used on three other occasions, in amputation at the hip joint, making in all nine cases, in eight of which the right artery has been compressed. Its employment has been attended with such success that the total amount of blood lost in the eight amputations is only 16 oz; no ill result has followed from the use of the lever in any instance.

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cases its use has been very easy indeed, and without injurious effect, and that during life both the rectum and meso-rectum are very elastic; there is no need to fear the effect of pressure on the vein; veins are constantly exposed to firm and continuous pressure in the treatment of aneurisms by instrumental compression, and without injury. It must, however, be admitted that in disease of the rectum (assuredly a most rare condition where such a formidable operation would be performed) its use would be inadmissible or impossible, and in certain cases of very short meso-rectum it might be impracticable to compress by its means the *right* common iliac. The employment of great gentleness and care will guard against mischief being done. The question now arises whether this lever possesses advantages over the more common plans of treatment—digital compression of the common iliac artery, and compression of the aorta by Lister's (or Pancoast's) tourniquet? Digital compression is only possible in children, and in adults with very lax belly walls, and is then difficult to maintain, especially if the operation is at all prolonged. Aortic compression is undoubtedly as a rule safe and efficient, but it is well to remember that Mr. Spence has recorded a case ('Edin. Med. Jour.,' 1864) in which he failed to control the artery by means of Lister's tourniquet; and Mr. Bryant mentions ('Med. Chir. Trans.,' vol. lv.) that in employing the tourniquet in the treatment of a case of aneurism he was once three hours before he was able to compress the artery efficiently; and the result of twelve hours' compression was acute peritonitis, ecchymosis of parietal peritoneum, meso-colon, and mesentery, while a coil of jejunum was so nipped that intestinal obstruction was caused, and the tissues around the aorta are described as loaded with effused blood. The advantages that can be claimed for the lever are the following:—

a. The disturbance of the circulation is less; the flow of blood through the sound limb and half of the pelvis is not interfered with.*

b. The lever does *not interfere with the abdominal respiratory movements,* nor is its use interfered with by them, as any instrument acting through the abdominal walls is. It can also be used in cases of *rigid abdominal walls, great obesity,* and in many cases of *abdominal tumour,* where the tourniquet could not be employed.

* The tourniquet must often, if not always, stop the flow of blood through the inferior mesenteric artery, and still further disturb the circulation.

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c. Less of the abdominal contents are compressed. The parietal peritoneum, omentum, and mesentery escape entirely, while it is improbable that the small intestine would be implicated; only one side of the rectum with its peritoneal covering is compressed.

d. Less pressure is required to control the stream of blood through the common iliac than through the aorta.

e. The common iliac artery is compressed more securely by the rounded lever in the hollow between the psoas and the lumbo-sacral promontory than is the aorta by the curved tourniquet pad against the convex spine.

f. It is more rapidly and easily manipulated. The slight movements of raising and depressing the hand are more easily and quickly accomplished than is the working of a screw.

g. The lever is far *cheaper* and *more durable* than the tourniquet, and if not at hand in any emergency its place can easily be supplied.

The first four of these advantages are obvious and real, and appear sufficient to demand a careful and patient trial of the lever; the last three advantages, although making the demand more urgent, would not of themselves, perhaps, overcome the surgeon's rational objection to 'acting in the dark.'

5. *The Use and Failure of the Antiseptic System.*—It has been stated ('Stimson's Operative Surgery') that it is impossible to use Lister's antiseptic dressings after this amputation. I found, however, no special difficulty. I used a shield-shaped dressing with the base over the buttock, and the other end brought over the stump to the groin. This was easily retained in place by a many-tailed bandage; one broad bandage was fastened round the waist, and to the back of this were sewn several double strips of gauze bandage; these 'tails' were brought round the stump and fastened to the band in front. The failure in my case was, I believe, due to not making the wound aseptic at the operation. I had intended to scrape out all the old sinuses, but, owing to the hurry necessary at the end of the operation, I could only well syringe them with carbolic lotion. Although possible after amputation by flaps, it is far easier to keep the wound aseptic when the limb is removed by the oval method.

6. *The Deep Sutures.*—In the attempt to get union by first intention there is nothing more important than to secure perfect apposition and immobility of the parts. Evidently

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the common superficial sutures fail in this respect in the case of the flaps in amputation of the hip, and it appeared to me that it would be well to have the flaps supported more firmly than head or quill sutures do, and by something which could be *rapidly* applied. I therefore asked Messrs. Wright to make for me some suture pins, which answered these purposes very well. Each pin is of soft steel about the size of a knitting needle, 9 inches long, and brought to a flat spear point at one end, while the other is fixed to the centre of an oval piece of vulcanite 1½ in. × 1 in. and ⅛th in. thick, a second oval pad of pure black rubber of the same shape and size being supplied with each pin. It is used thus: the pin is thrust through the flaps until the vulcanite pad is in contact with the skin, the rubber pad is then slipped down over the pin on to the other flap with a sufficient degree of firmness, and the pin divided half an inch above it by wire nippers. The elastic rubber grips the pin, and the flaps are securely held between the oval pads. I employed three of these sutures, introduced about 2 in. from the edge of the flaps, avoiding the great vessels. The sutures can, of course, be withdrawn with the utmost ease by slipping off the rubber and then seizing and drawing upon the vulcanite. The pins are readily made aseptic. They succeeded very well in this case, preventing all quivering, retaining the flaps in accurate apposition, and preventing retention of exudation. Indeed, they acted so well that, while being dressed, the man was able to turn over on to his sound side and raise his stump without any assistance—the stump moving as one mass.

In comparing these sutures with different forms of wire suture it is to be noted that they secure fixity of the flaps without tightness. Wire sutures only hold parts firmly and immovable when applied *tight*, and the nipping of the parts is never good, and may be injurious; the inflexible pins, however, fix them steadily and securely though the rubber pad is only gently pressing upon the skin.*

7. *The Thrombosis.*—The cause of the man's death was no doubt the grave blood change evidenced by the widespread thrombosis. It is to be noticed that this condition was very nearly symmetrical; and that it was not limited to a

* Since this paper was read these pins have been used with good effect in two cases, under the care of my colleagues, Mr. Cowell and Mr. Parry. In Mr. Cowell's case the pin was found to be very useful in restraining intermediary hæmorrhage which set in, for by depressing the rubber pad the flaps could be firmly pressed together.

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part or the whole of one vein, but extended into every small radicle of vein in the left leg. That the clotting began in the common iliac vein is indicated by the brick-red colour of the clot there, while that in the smaller veins was black; and also by the distension of the veins at each pair of valves. The absence of œdema, however, is opposed to this view, and is a striking fact in the case. It cannot be held that the slough in one corner of the stump was due to thrombosis, for it was very limited in extent, and appeared before there was any evidence of the plugging of the veins; probably it was occasioned by bruising of the infiltrated and unhealthy tissue. Although unable to speak positively as to the cause of the thrombosis, two possible factors are evident: (1) the condition of debility and prostration produced by the disease and the operation; and (2) the absorption of carbolic acid, as shown by the discoloured urine.

In favour of the former view is the well-recognised occurrence of the event, but against it are the facts that the man's general condition underwent a sudden change, he did not gradually become weaker after the operation; and then the wide extent of the thrombus. In favour of its being due to absorption of carbolic acid are the facts that the fatal symptoms set in coincidently with the excretion of 'carbolic acid urine;' that carbolic acid, when acting directly upon the blood, is known to produce thrombosis, and that in some of the fatal cases of carbolic acid poisoning the blood has been found firmly coagulated in the heart and large vessels.* Against this view it may be urged that in very many cases of carbolic acid poisoning the blood has been dark and fluid post-mortem,—this may be accounted for by the asphyxial symptoms usually attending these cases; and also that this effect has not hitherto been noted although cases of absorption of carbolic acid from wounds are of frequent occurrence.

It is certain that the thrombosis was in no way connected with the use of Davy's lever, for the clotting did not extend up to the part of the vein which was compressed, and no change whatever could be detected in the vessel at that spot.

* Ogston and Zimm, quoted by Bœhm, Ziemssen's 'Cyclop.' vol. xvii. p. 531.

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XXXIX.—*A Case of Retention of Urine caused by Impermeable Urethral Stricture, treated by Tapping the Bladder above the Pubes, and later by External Section of the Stricture, a Catheter passed through the Bladder and a Staff per Penem as far as the Obstruction being used as Guides.* By J. W. Hulke. *Read April* 25, 1879.

An upholsterer, æt. 40, was admitted into the Middlesex Hospital under my care at 6.30 P.M., November 29 last, with retention of urine, which had begun early in the morning. The distended bladder nearly reached the navel. He was in great pain, making frequent violent efforts to micturate, but unable to expel a drop of urine.

Twelve years previously he had been under treatment for stricture in a hospital in Australia, but he had afterwards neglected it, and recently the stream had again become very small.

The house surgeon, thinking that the retention might be caused by spasm, superadded to an organic impediment, tried the customary remedies for this, but without avail.

At 10 P.M., it being impossible to pass any catheter through the obstruction, I aspirated the bladder with a fine trocar passed into it above the pubes.

It was hoped that after this the spasm might pass off, and the urethra become pervious; however, at 1 P.M. next day, I found no urine had been voided, and the bladder had become fully as distended as it was the night before.

It was plain that a less transient means of relief than aspiration was required. A long curved trocar was thrust into the bladder above the pubes, and the canula secured *in situ*, the urine being led from it into a vessel through an india-rubber tube. The immediate relief was complete. On the third day, as the urine flowed less freely, and it was thought that the canula might be clogged with mucus, it was replaced by a gum-elastic catheter, and this was changed every four or five days. December 6, he had a slight pleurisy, which quickly subsided, but recurred on the 13th. He had had, he said, more than one similar attack before.

Attempts to pass a catheter per penem through the stricture were made on several occasions, but always without success, and not a single drop of urine had flowed per urethram.

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On January 3, as he had thoroughly recovered from the pleurisy, he was placed in the lithotomy posture, a No. 10 silver catheter was passed through the supra-pubic hole into the bladder, and from this through the prostatic urethra until its end was stopped in the perineum, near the bulb, by the stricture, where it was plainly felt. A staff was next passed per penem down the urethra to the front of the stricture, when it became evident that the ends of the catheter and staff were separated by only a small interval. The urethra was opened through the perineum on the end of the catheter, the lips of the opening were seized and held apart (as in Wheelhouse's operation); a small mass of dense fibrous tissue in the bulbous urethra was now divided from the catheter forwards, in the direct line between its end and that of the staff, after which the catheter was withdrawn into the bladder, the staff closely following it, and when the end of the latter was fairly in the bladder, the withdrawal of the catheter from the bladder through the supra-pubic hole was completed. A flexible catheter was then slid over the staff per penem into the bladder, and lastly the staff removed.

Very little blood was lost at the operation, but after the patient was placed in bed rather free bleeding occurred. As the vessel could not be seen, a sponge-compress was applied, which answered completely. It was removed next day.

The immediate relief was complete. The supra-pubic hole quickly closed. The catheter, changed twice weekly, was worn continuously during a fortnight, and afterwards passed twice a week.

The patient is now convalescent. He micturates in a full stream. The urethra easily allows the introduction of a No. 10 catheter. The perineal incision has soundly closed.

Remarks.—In the above case tapping the bladder was selected in preference to puncturing the urethra through the perineum behind the stricture, as suggested by John Hunter,* and even in our own time ably advocated by Mr. Cock, because, so far as the course of the urethra could be ascertained, it appeared to be deflected from its normal position somewhat towards the left. It was preferred to perineal section, which has been my usual practice, because I had not, at the moment, a Fergusson's catheter-staff at hand—so useful an instrument in these cases. Of the two methods, tapping through the rectum was not safely practi-

* Works of John Hunter, with notes by J. E. Palmer, vol. ii. chap. x. p. 292.

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cable, because the posterior border of the prostate gland could not be distinctly felt; there remained, therefore, only puncture above the pubes.

It is not suggested that this practice, successful in the present case, should supersede other recognised plans of treatment; but it is recommended as a valuable proceeding which deserves trial in exceptional cases. Suggested by John Hunter, and adopted by Dittel, of Vienna,* its chief recommendations are, I think, its convenience, and probably its greater safety, but the latter has still to be tested by larger experience. Its greater liability to be followed by urinary extravasation—one objection often urged against suprapubic tapping—does not appear to be borne out by facts. Dittel says that it did not occur in any of his cases; I have not myself observed it, although the first patient on whom I practised it was very corpulent—just the condition in which it might have been expected to occur; and a provincial surgeon has quite recently stated in one of the weekly Journals that it had not happened once in 17 cases within his own experience. That it is an easier operation than tapping through the rectum will, I think, be conceded by most surgeons; it admits, also, of antiseptic precautions, which tapping through the rectum does not; and should division of the stricture through the perineum be required later, this will certainly be more easily and exactly accomplished when the course of the urethra in front and behind the obstruction is indicated by a rigid guide than when these aids are wanting. These advantages will perhaps be less fully appreciated by hospital surgeons than by the practitioner in remote country places, who seldom operates, and so lacks the dexterity and confidence which come from use, and who too often lacks also the aid of trained assistants. I had anticipated a little difficulty in finding from the bladder the prostatic opening of the urethra, but the catheter seemed to glide into it by its own weight with scarcely any direction on my part. In his remarks on the different methods of treating retention, John Hunter suggested that when after tapping above the pubes a catheter has to be left in the bladder, its presence will cause least inconvenience if its end be placed in the urethra, but it does not appear that he wrote from actual experience—indeed, the contrary is inferable. The suggestion to utilize the

* Dittel, Pitha and Billroth's *Allgem. u. spec. Chirurgie.*

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catheter so placed as a guide, to introduce per penem a straight canula, until the ends of the two instruments are separated only by the stricture, to perforate this with a piercer passed through the canula, into the end of the catheter, and to then introduce a bougie or hollow catheter, occurs in a footnote, and is probably the editor's.

XL.—*Case of Ichthyosis of Unusual Character.* By H. Radcliffe Crocker, M.D., for Dr. Tilbury Fox. *Read April* 25, 1879.

MATTHEW GIBSON, æt. 10 years, admitted into University College Hospital, June 12, 1878, under Dr. Tilbury Fox, was a very weakly child when born, as the mother was delicate and lived badly during her pregnancy. The mother noticed an appearance of bruising at the time of birth in three places, on the thighs, the left being the worst, and presenting raw-looking places as large as a finger. The left foot on the outer side was in a similar condition, and this extended up to the middle of the leg. On the head there were also raw places, but otherwise the skin generally was healthy looking. The raw places healed up in seven weeks; and about that time the still-existing warty-looking growth began first to appear around the sores, but gradually spread over wider areas until the body was nearly covered with it at seven years old. Since then it has been stationary.

Present State.—The boy is rather thin but fairly developed, and evidently slightly deficient in intellect, having a badly-shaped head with projecting teeth, slow of comprehension, and laughing often and vacantly; cannot pronounce some words or letters, such as 'th,' for which he substitutes 'ff,' as in 'Matthew.' However, he has never been to school, as they would not take him. Comes of a healthy stock, and has four healthy brothers and sisters, and there seems no syphilitic history connected with him. No consumptive history, but he looks rather tubercular, with fair hair, long eyelashes, and transparent thin skin, and conspicuous veins; long hairs on limbs. Teeth of very bad shape, irregular, and of bad colour, but nothing definite to be gathered from them—smells strongly—tongue clean.

He is covered with a warty and horny-looking growth from the crown of his head to the soles of his feet, though

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there are wide areas of perfectly healthy skin; and the growth is not symmetrically disposed, being much more closely aggregated and larger in size in some parts than others. There is more on the right side of the trunk than on the left; none on the left palm, but a band of it on the right; very little on the soles, it being principally on the sides of the feet; none on the front and sides of the left leg, which looks swollen and shiny, but much behind, whilst it is extensive on the dorsum of the right foot, and there is some on the front of the leg. There is not much on the face, most being on the right side. The hairy scalp is also covered with it.

In the sites of the patches which were described as raw at birth are now thin white cicatrices, except on the scalp, where the scars are raised and thickened almost like keloid. The growth is disposed in irregular patches and linear bands which do not follow any particular course. There are no special patches on the fronts of the knees, or the backs of the elbows, though it is rather thick on the left knee, and the skin between the growth sweats freely and is quite healthy. It differs in aspect somewhat in different parts. On the hairy scalp it is like a dry seborrhœa; the crusts are picked off easily, and leave an injected surface and enlarged prominent papillæ like threads; on the body and limbs the growth is more warty and springs from a slight red raised base, but there is, to the touch, a slight greasiness; on the hands and feet the secretion is piled up in columns, giving a horny appearance, the fibres running vertically to the truncated apex, as may be seen in one of the drawings; on the neck and under the chin the growth is apparently made up of a mass of little warts. The crusting can be, in many parts, picked off without much difficulty, and some rubs off from his turning in bed; in other parts the excrescence cannot be removed without producing pain and bleeding.

He has been treated by applying unguentum picis comp. freely, and in a few days picking off the softened horny masses, and again applying the ointment. This has been partially successful, for although the growth has recurred extensively, still large patches have remained free from it, especially on the scalp, face, and arms, the skin being a little uneven and redder than the surrounding parts.

Note.—Since the case was shown to the Society, I have had an opportunity of making a microscopical examination

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DESCRIPTION OF PLATES IV. AND V.

ILLUSTRATING DR. CROCKER'S CASE OF ICHTHYOSIS OF UNUSUAL CHARACTER.

PLATE IV.

FIG. 1.—Front view of the patient, showing the distribution of the eruption.

FIG. 2.—Vertical section of the skin through the base of one of the horns, magnified 120 diameters. The horn has fallen off in the preparation of the section. *a*. Horny layers projecting down into the inter-papillary part of the epidermis. *b*. Enlarged papillæ.

PLATE V.

The back of the right hand, showing the character and distribution of the eruption.

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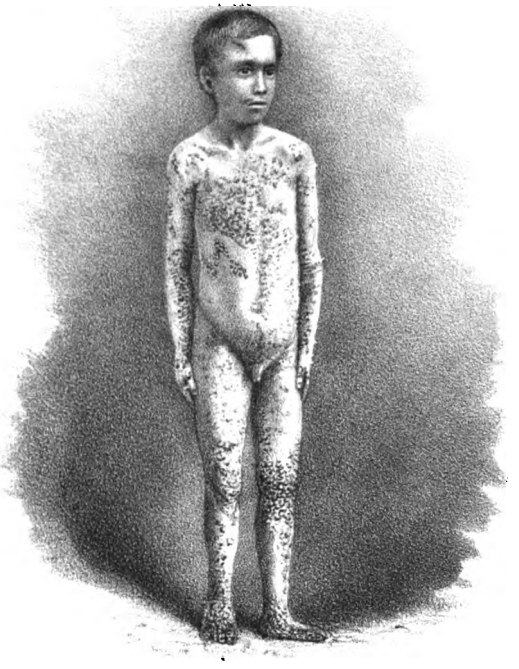

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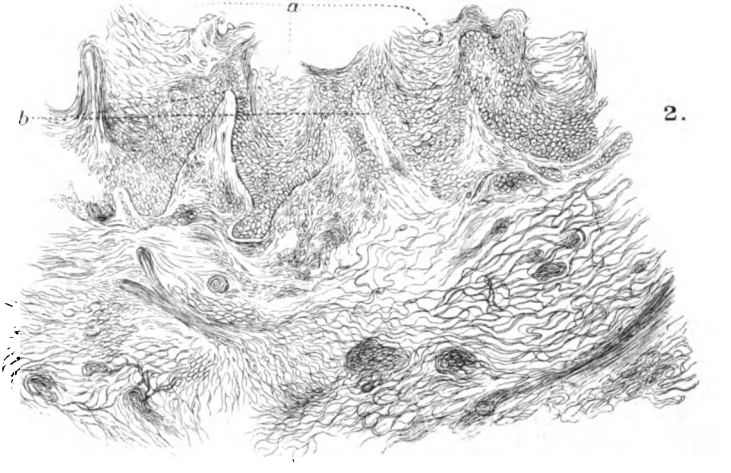

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Dr. Crocker's case of Ichthyosis.

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Dr. Crocker's case of Ichthyosis.

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of a part of the affected skin, of which the following is a brief account:—

The papillæ and their vessels are much enlarged; the Malpighian cells adjacent to the papillæ are normal, but instead of the intermediate layer of cells, which in health fills, or, so to speak, levels-up the interpapillary spaces, and so forms a nearly plane surface on which rests the cuticular layer, we have the interpapillary spaces filled with the strata of horny cells, so that in contradistinction to the healthy, the hyperplastic cuticle is moulded upon the papillary layer. In the section the enormous outgrowth of the horny layer has fallen off, leaving little beyond its interpapillary part.

Separate sections of the horns show only imperfectly the columnar formation, which is well seen, however, in the drawing of the hand which I have passed round, each fibre springing from a papilla. Some sections do not show the dipping in of the horny layer between the papillæ to so great an extent as others, and so approach the condition which Rindfleisch describes as appertaining to warts, whereby he distinguishes them from ichthyosis and horns. This is approximately true only. I have placed a section of an ordinary wart under the microscope. The papillæ are more developed than in ichthyosis, especially round the central core of the wart, and the horny does to a certain extent mould itself over the papillary layer. The papillæ under the core are nearly obliterated. It will therefore be seen that the growths are ichthyotic rather than warty, as I considered them before I had made sections of the skin. Some sections, however, incline towards the warty character.

Dr. Duckworth has described a somewhat similar case in the 'St. Bartholomew's Hospital Reports' for 1873, to which he kindly drew my attention when the boy was before the Society. A cast of this case is in the museum of St. Bartholomew's, but in this instance the intermediate skin was xerodermatous.

While therefore anatomically of ichthyotic character, it differs from ordinary cases, in that it is partial, non-symmetrical, affects the palms and soles, while the intermediate skin is thin, smooth, perspires freely, and is, in short, healthy instead of being xerodermatous, while the growth is entirely horny rather than in plates. To avoid, however, adding more names to the already overloaded nomenclature of dermatology, I should consider it an unusual form of Ichthyosis hystrix.

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XLI.—*On the Question of Tracheotomy in Bilateral Paralysis of the Posterior Crico-Arytænoid Muscles, and some Remarks respecting this Disease.* By Felix Semon, M.D. *Read April* 25, 1879.

IT is probably within the memory of several of the gentlemen here to-night that in the spring of last year I brought before the Society a case of this disease, which has since been published.* I then explained the stenosis of the glottis as being produced by the paralytic contraction of the antagonistic muscles, and came to the conclusion that if other methods of treatment, especially the direct application of electricity, did not soon produce a considerable improvement, tracheotomy ought to be proceeded with at once. With respect to this operation I said the following:—'I am the most decided advocate of its *early* performance. I feel sure that the unfavourable results obtained in two of our cases, and mentioned in several of the instances reported by other observers, are solely due to the fact that the operations were performed too late, when the carbonisation of the blood had already gone too far. Everybody knows how much better the final results of tracheotomy in diphtheria, and other diseases in which this carbonisation is to be feared, are, when the operation is *timely* performed, than when it is left to the last minute. The same reasons are present in the disease under consideration. Tracheotomy being performed in time, the patient will afterwards enjoy good health, with only the disagreeable modification, that he will probably have to wear his tube permanently; while, if it be postponed to the last, in consequence of the doctor's or the patient's vain hopes of an amelioration, the prospects of recovery are comparatively unfavourable.'

Although there seemed to be a general agreement as to this principle, I then stated that before proceeding with the operation I would give my patient a fair trial with the direct application of electricity to the paralysed muscles, it being only too likely that a permanent wearing of the tube would render it impossible for him to follow his occupation of inspector of the District Railway. Accordingly, I have for nearly a year's time regularly carried out this treatment, my

* 'Trans. Clin. Soc.' vol. xi. p. 141. It should here be stated that the 2nd and 3rd figures in page 147 were transposed by mistake, so that the text under the 2nd figure refers to the 3rd, and *vice versâ*.

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friend Dr. De Havilland Hall having been good enough to make the applications during my absence last summer.

The patient has never since had any of those suffocative attacks, one of which the Society witnessed last year; his breathing has been much relieved, the inspiratory stridor being scarcely audible at all; each application has been followed by immediate great subjective relief; but as to the objective symptom of the stenosis of the glottis, I am bound to say that there is but very little, if any, improvement to be seen. I am at a loss how to explain satisfactorily this subjective improvement, the stenosis of the glottis remaining stationary all the time. That the electric treatment, however, had really some influence upon the disease appeared from the fact that as often as the patient neglected coming for a few days, being prevented by his occupation, a change for the worse was to be noticed.

On Monday, February 17, of this year, he came as usual to see me and to receive his application. The appearance of the glottis then differed in no way from that formerly noticed. On the evening of the same day, at a meeting of the Medical Society, Mr. Lennox Browne read a paper on 'Stenosis of the Larynx,' in which he referred, amongst other causes of this condition, to the disease under consideration, and read notes of an illustrative case, opportunity being at the same time given to members to examine the patient themselves. There could be no doubt, as I convinced myself by personal examination, that there was still an incomplete bilateral paralysis of the abductors, quite analogous to that seen in the second case, to which I shall refer to-night; in other words, there was still a very considerable amount of stenosis of the glottis, although there was no inspiratory stridor. From Mr. Browne's description, however, it appeared that there had been all the inspiratory dyspnœa, which is so characteristic of this affection. It had already been decided to perform tracheotomy, but a final trial was given to hypodermic injections of sulphate of strychnia (beginning with $\frac{1}{30}$ of a grain for a daily injection, and increasing this quantity to $\frac{1}{15}$ grain). This was very successful, inasmuch as the subjective complaints were completely relieved, and the inspiratory stridor entirely disappeared; but there still remained during inspiration the considerable stenosis of the glottis which I have mentioned. In short, Mr. Browne's treatment by injections has produced in his patient the same results which the electric treatment has

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obtained in mine, viz., great *subjective* relief and apparent disappearance of the danger of a sudden fatal issue, but no actual improvement in the existing conditions. Mr. Browne urged the rationality of trying all milder methods before tracheotomy, and to this much I agreed, quoting my own case; but his further conclusion that thus tracheotomy could be often entirely avoided, I could not admit, since, as I pointed out, in his case as well as in my own, the actual danger had by no means yet disappeared. I, at least, did not flatter myself at having effected a *cure* in my patient.

I did not then think that the correctness of this statement would be so soon proved by facts as it turned out. On the Tuesday and on the Wednesday following my patient did not attend. I was, however, not alarmed about it, as his duties sometimes prevented him from coming regularly, and as he had strict orders to send or telegraph for me at once, in case any dyspnœa should supervene. On Thursday the 20th, at 11.15 A.M., however, a brother-inspector, a friend of the patient, came to my house to say that Mr. Keyte was dying. I at once went with the messenger in a cab to the house. On my way there I learnt by inquiries that the patient, who had been well up to Wednesday evening, had frequently coughed while on duty on the evening of that day, that he had come home half an hour after midnight with some dyspnœa, that during the night his breathing had become more and more laborious, that he had given no answers to the repeated questions of his wife, and that the latter, having gone down stairs in the morning to make him a cup of strong coffee, had found him completely insensible when she returned to the bedroom at half-past eight. All efforts at rallying him having been unsuccessful, a neighbouring practitioner was sent for. This gentleman came, looked at the patient, made some inquiries as to his previous disease, and left, saying that he could not do anything for the patient. Then the wife sent for a friend of her husband's, and it was he who suggested that he should go to fetch me. But, coming by train and walking from the station, he lost so much time that it was not till noon that I arrived there. On my entering the room it was evident that the patient was *in extremis*. His face was very cyanotic, the superficial veins greatly swollen; nose, ears, and lips bluish and cold, as also were the extremities. No pulse at all was to be felt, the heart-beat was scarcely audible. A long, *but not so very deep*, sighing inspiration was followed by a still longer, appa-

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rently complete respiratory interval; the expiratory movement was not noticeable. It was evident that the patient was dying from the effects of carbonic acid poisoning, produced by the insufficient interchange of gases within the lungs; the sudden aggravation of his state being most likely due to some laryngeal catarrh with swelling of the mucous membranes of the larynx. The next inspiration being apparently a great deal weaker than the first I had observed, I at once proceeded with tracheotomy, which, of course, owing to the gravity of the situation, could not be performed in the usual quiet manner. Having cut with *one* incision through *all* the tissues and through the trachea, I inserted the largest tube which I had in my tracheotomy case, and started artificial respiration. *It was, however, not till after three and a half hours constantly and laboriously thus keeping up the respiration* that the patient commenced breathing spontaneously. All previous attempts at giving up artificial respiration were, after one or two weak inspirations, regularly followed by complete cessation of all respiratory movements, and four or five times during this period I really thought that his next breath would be his last. Repeatedly I had to suck out the blood, which had run down into his trachea and the bronchi, by means of an elastic catheter, which I passed down through the silver tube, and I repeated this as often as the stertorous noise of his respiration showed that some quantity of blood had again collected in the large air-passages. Fortunately the hæmorrhage ceased spontaneously after some time. Moreover, I gave all the analeptics which were at hand, and at last, *at half-past three p.m.*, I had the pleasure of seeing that a spontaneous respiration began. The patient, however, did not regain consciousness, but at once fell asleep, and slept, as I was informed, till half-past seven in the evening, when he awoke pretty sensible, but still peculiarly drowsy. This drowsiness and a small degree of cyanosis, both of which are certainly due to carbonic acid intoxication, remained for the next two days, convalescence being moreover somewhat retarded by a very extensive bronchial catarrh, which lasted for about three or four days. After this, however, the patient completely recovered, and now feels, as far as his laryngeal disease and his general health is concerned, better than he ever has done since the beginning of the laryngeal affection.*

This case made such an impression upon my mind that

* The symptoms of ataxia, described last year, have since made constant progress, but no new phenomenon has associated itself with those then noticed.

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I at once proposed and performed within the same week tracheotomy upon another patient, male, æt. 48, suffering from the same affection, who had been sent to me about a week previously by Dr. Sutro, of Finsbury Square. I would not enter here into his case did not the laryngoscope, in this instance, reveal a very curious and interesting appearance. Whilst during vocalisation his vocal chords come completely together, as they normally ought, they do not separate sufficiently during deep inspiration. But the image is greatly different from that seen in my first case and in the other cases of bilateral paralysis of the abductors which have been hitherto published. Whilst in these the rima glottidis became reduced to a mere slit, we see in this case that only the *anterior* two-thirds of the vocal chords remain close together, the posterior ends suddenly diverging at a remarkably large angle, and thus leaving a considerable triangular opening between their borders and the inter-arytænoid fold. This appearance has, to my knowledge, not yet been described,* and I have seen it but once except in my own case, viz., in Mr. Lennox Browne's, in which latter case, as far as I remember, no explanation was attempted.

The following reasoning may possibly account for it. According to some recent physiological observations of Rühlmann,† which have been accepted by Oertel,‡ the function of opening the glottis, presided over by the posterior crico-arytænoid muscles, is not a simple but a complicated action, which can be divided into two simple movements, viz., 1. the drawing outwards and downwards of the arytænoid cartilages on the articulating surface of the cricoid cartilages; and 2. their rotation round their vertical axis by which the vocal processes are turned outwards, the cartilages having been fixed previously behind and on the inner side. The former of these two actions is, according to Rühlmann, executed by the weaker *external* portion of the muscles, the fibres of which are running in a more nearly vertical direction, whilst the rotatory action is presided over by the strong *median and inner* portion of the muscle, the fibres of which

* It is similar to that seen *during vocalisation* in cases of bilateral paralysis of the musculus thyreo-arytænoideus internus complicated with paralysis of the arytænoideus proprius, and figured in Von Ziemssen's 'Cyclopædia,' vol. iv. p. 477, fig. 50 (German edition).

† 'Untersuchungen über das Zusammenwirken der Muskeln bei einigen häufiger vorkommenden Kehlkopfstellungen.' Sitzungsberichte der kais. Academie der Wissenschaften. Wien, 1874. Band 69. Heft 1–5.

‡ 'Ueber den laryngologischen Unterricht.' Leipzig, 1878, p. 15.

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run more obliquely. Now it is clear that, if for some reason or other the *outer* portion of the muscle was paralysed on both sides, whilst the *inner* portion could still produce the outward rotation of the vocal processes, and if, secondarily, a paralytic contraction of the abductors set in, the result would be that seen in this case, viz., narrowing of the anterior parts of the glottis in consequence of the paralytic contraction of the antagonists, and opening of its hindermost part in consequence of the outward rotation of the vocal processes. Of course I only offer this as a hypothetical explanation.*

Interesting as this case and the foregoing may be, I would not have troubled the Society with them, if it were not that both, and especially the first, raise the large question, *Under what circumstances is tracheotomy to be performed in these cases, and at what period of the disease?* Strongly averse as I am to the practice—which I am afraid is nowadays but too common—of drawing general conclusions from a single observation, I cannot help feeling that the nature of this case seems imperiously to demand the laying down of a general rule in respect to this question. If it be possible that in a case, which has been under constant treatment for a year with marked subjective relief, symptoms of immediate danger to life should occur from an apparently trivial occasional cause within a few hours, and if even the presence of a medical man, if he be unaware of the nature of the disease, does not give any sufficient guarantee for the saving of the patient's life, whilst the chances of the operation become the smaller the longer it is postponed, I venture to propose the following general principle for the treatment of these cases :—

In a case of bilateral paralysis of the posterior crico-arytæ-

* For the sake of completeness, it may be stated here that the symptoms of this case in no way differed from those generally seen in cases of complete bilateral paralysis, and that in spite of the comparatively greater opening of the glottis the inspiratory stridor was quite as great as that in cases of complete bilateral paralysis. As to the etiology of the case, nothing could be made out pointing to another origin than to a purely rheumatic one, although the patient has been a great sufferer for the last eleven years, and was even confined in an asylum eleven years ago, in consequence of melancholia and absence of mind, following a carbuncle on his neck. He was, however, dismissed three months later cured, and has never since suffered from mental disorder. I at first treated him with direct applications of electricity, which gave him immediate subjective relief, but, as he once had a grave attack of dyspnœa shortly after he had left my house after the application, I advised him to have tracheotomy performed, and to this he consented at once.

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noid muscles, in which a considerable stenosis of the glottis has taken place, and marked dyspnœa is present, unless WITHIN A SHORT TIME *not only* SUBJECTIVE *relief, but an* ACTUAL *enlargement of the glottic opening has been obtained by whatever method might be employed—then tracheotomy ought to be performed without delay, not as a means of cure, but as a prophylactic measure, with a view to the subsequent removal of the tube, in case any later therapeutical efforts should produce a real cure of the affection.*

In conclusion I have only to state that, after the patients had recovered from the operations, I tried on both of them the effects of hypodermic injections of sulphate of strychnia. The injections were made daily in the neighbourhood of the larynx, the quantity being systematically increased from $\frac{1}{30}$th of a grain to $\frac{1}{10}$th of a grain for each injection. This treatment was continued in both cases for three weeks, within which time more than one grain of the salt was injected. The result was in both cases entirely negative.

XLII.—*Six Cases of Lichen Scrofulosorum of Hebra, with Remarks.* By TILBURY FOX, M.D. *Read April* 25, 1879.

I BELIEVE few English practitioners are acquainted with Hebra's Lichen Scrofulosorum, and yet in my experience this disease is not so very rare in this country. I have thought, therefore, that a short clinical contribution on the subject, and a carefully-executed water-colour drawing of the eruption in a typical case of the disease, might be deemed acceptable for discussion and subsequent publication by the Society.

The following are notes of six cases of lichen scrofulosorum recently under my care:—

CASE I.

Thomas P., a clerk, æt. 17, residing in Gloucester Road, Regent's Park, has lived in London all his life. Always well fed and clothed and comfortably housed.

There are 7 living children, all of whom are pretty healthy. Father healthy. No distinct history of phthisis on father's side. Mother weak. Eight members of her father's family

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died of consumption, namely, 3 of her brothers and 1 sister, and the others were near relatives.

The mother says this boy has always been a great trouble to her ever since his birth. At 5 years of age he was considered to be very delicate about the left lung. Six years ago he suffered from enlarged glands on both sides of the neck, for which he was treated by iodine locally and cod-liver oil internally. Two years ago he had an attack of inflammation of the lungs, suffered from slight hæmoptysis, and was very ill. It left him very delicate, and he took strong tonics. Four years ago he came under my care at University College Hospital, suffering from the present disease in a slight form. The disease assumed at first sight the appearance of ill-developed lichen circumscriptus, but it was distinctly follicular. The boy was put on cod-liver oil and sent to Eastbourne, and he soon got well. The disease reappeared about 6 weeks ago as a small patch on the side.

May 27, 1877.—At the present time, on looking at his skin, over the *greater* portion of the front of the chest and also over the back and even about the arms each follicle is a little more prominent than usual, so that the surface is very minutely and indistinctly papular. But in addition there are well-marked more or less circular patches of agglomerated papules. They are confined to the front, back, and sides of the trunk, from the groin to just above the nipple line in front, and from the buttocks to the level of the shoulders behind.

About 15 of these patches are seen on a lateral view of the left side, varying in size from a threepenny-piece to 1½ inch in diameter (plate vi. fig. 1). These patches are made up of faintly red papules the size of mustard seeds, and in fact look like them. They are quite distinct the one from the other, are seated at the hair follicles, and are ragged and scaly on the apex. There is a slight general blush over the areas occupied by these papules. For some time this condition alone existed, but then scattered amongst these papules are some acne spots, which are, in fact, produced by the inflammation of the pre-existing spots. There are 5 or 6 over an area of an inch. This condition is seen in plate vi. fig. 2. There are about 8 patches on the right front and side, and about 24 on patient's back.

The disease is unattended by itching.

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Case II.

Miss A., aged 16½, who had grown very fast of late, consulted me on November 21, 1877, for a rash more or less general over the trunk and limbs. The young lady had been suffering for some time from spinal disease, for which she had undergone careful mechanical treatment at the hands of a distinguished surgeon, and also had taken iron for a considerable time. On the father's side consumption existed. For two or three months she had noticed that a rash existed, but it had not troubled her in any way except by its unsightliness.

On carefully examining the skin, the follicles were generally more prominent than usual, and particularly about the trunk of the body, but it could not be said that they were so prominent as to form decided papules over the greater part of the body. Upon the trunk, and especially the front of the chest and its sides, the follicles were raised into decided pale papules, the orifices of the follicles being occupied with little plugs. Here and there the papules assumed the grouped appearance, and formed typical more or less circular patches of lichen scrofulosorum. In addition there were many true acneiform spots scattered about the surface especially where the grouped papules occurred. It was easy to trace the transitional stages between the single papules and the suppurating acne spots. There also existed well-marked seborrhœa of the scalp.

This case was chiefly interesting as showing the existence of a different form of lichen scrofulosorum, a point to be referred to presently.

Case III.

A similar case I had seen a little time previously. In this instance the patient was a young woman about 14 or 15 years old, who was under the treatment of some one else for spinal disease.

Case IV.

Miss G., at 8 years, was brought to me on July 14, 1877, with well-marked L. scrofulosorum of two months' standing. The mother called my attention first to certain diseased spots about the head and neck. In the former site they consisted of circular scurfy places, the hairs of the part being surrounded by sheaths of sebum, but not being in any degree loosened from their attachment below in the follicle, and the mother says they do not fall out. The condition is one of seborrhœa only, in which the inspissated sebum clings to

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the hair shafts. In the latter situation, viz., the neck, are one or two patches of lichen scrofulosorum. On the front of the chest and the side the disease is well marked in several patches. The child is very delicate, and the glands in the neck are much enlarged, and the seat of scrofulous inflammation.

Case V.

Master F. P. was brought to me for advice January 3, 1879. He was just 10 years old, a tall boy for his age, extremely thin, and excessively pallid so as to have almost a chlorotic aspect. He presents a general appearance of great delicacy, and those who have the charge of him report that he requires very careful tending and dieting. His eyelashes are long, the body is covered by fine downy hairs, and there have been enlarged glands in the neck, but there is no evidence of any spinal or joint disease. Has suffered from enteritis, and been treated with syrup of the iodide of iron. The teeth are good but notched and extremely backward, and a well-known eye surgeon has recommended spectacles for deficient sight, arising from what he is reported to have called 'backward development.'

Scattered over the trunk, front and back, especially towards the lateral parts and the shoulders, are innumerable little slightly reddened acuminate projections devoid of irritation, and evidently formed in connection with the follicles; in fact, most of the follicles in these regions seem affected, but not equally distinctly. None of the papules exceed an ordinary pin's head in size, except where one is inflamed and acneiform here and there. The limbs, face, and neck are free. There are a few decided acne spots intermingled with the papules about the shoulders. The affection is indistinguishable from lichen scrofulosorum as regards the actual papules, but differs in that the implicated follicles are not collected in the characteristic groups or segments of circles. But there is no difference whatever between the papules in this case and those which occurred in a scattered form around typical patches of lichen scrofulosorum in Case II. The general condition in the case was that in which L. scrofulosorum might have been expected to occur.

Case VI.

Miss T., æt. 12, came to me on January 15, 1879.

The family history disclosed evidences of decided delicacy on the mother's side—two sisters and a brother having died

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of phthisis—and also of weak health on the father's side, though no actual phthisis. Further, an elder sister of the little patient has had hip disease and chronic gland mischief which has left scars on the neck.

The patient is a fragile and delicate-looking girl, and is the subject of very severe pustular acne, occupying especially the typical seat of lupus erythematodes of the face, that is, the parts of the cheeks under the eyes, the nose on both its lateral surfaces, and the bridge of the nose; but the forehead and parts of the outer region of the cheek are slightly affected. The acne is made up of rather small and decidedly pustular spots, that are scarcely distinct the one from the other, but over the nose they stand out from a more or less red infiltrated patch; here, in fact, the acne spots are so crowded as to produce a patch, but the pustular points are distinct. The nose swells a good deal at times. There are a few (half-a-dozen) acne spots scattered about each arm, and a few over the nates and near the groins, and some lower down.

On the right side is a large well-marked patch of lichen scrofulosorum, 1½ inch in width, made up of small reddish papules, seated at the hair follicles, and studded by distinct acne-like spots. There is a second on the other side not so large, and a third on the left groin. There are indications of others. These patches have existed two or three months, the acne six.

The mother tells me that the patient has suffered severely from chilblains and cold feet this season, and had an enlarged gland in the neck some little time since.

Remarks.—Hebra says 'the characteristic symptom of the disease is an eruption of miliary papules, which may be either pale yellow, brownish red, or the same colour as the rest of the skin. They are always placed in groups, and sometimes form circles, or segments of circles, within which may occasionally be seen a few pigmented spots, indicating the seat of former papules, and always covered by a very few minute scales. . . . The papules produce but little itching, and being consequently not scratched present no excoriation . . . they remain very little altered. . . . The disease is mostly confined to the trunk, occupying the abdomen, chest, and back.' Hebra points out the complication of the disease by acne-like spots, and the occurrence of the disease in individuals of pronounced scrofulous diathesis.

It will be observed that my cases, in the main characters of the disease, completely answer to those in Hebra's description.

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In more than one of my cases, scrofulous spinal disease was present, and all the subjects of the malady were fair, lymphatic, and delicate-looking.

There is one point of difference between Hebra's description and my own experience of the eruption, and it is, that whereas Hebra states that the papules in the eruption always occurred in groups, forming circles or segments of circles, in certain of my cases, in addition to this prominent feature, the follicles of the trunk generally were affected, so as to form minute papules, not grouped, but isolated; and in one case (No. V.) there was no actual grouping of the follicles or patches, but they were more or less uniformly affected over the upper part of the chest and the back, a few acne-like spots being intermingled, especially about the shoulders, with the minutely papular rash. In Case VI., severe acne of the face co-existed, and there were scattered acne spots on the limbs.

I believe, in fact, that lichen scrofulosorum may sometimes occur in a more or less diffused and non-grouped aspect, its true nature being shown by the fact that the papules are composed of plugged follicles, by the presence of acne-like spots, and by the many general evidences of the strumous constitution of the individual affected.

The treatment of these cases is satisfactory; they improve under the exhibition of anti-strumous remedies—dietetic and medicinal.

XLIII.—*A Case of Lichen Scrofulosorum.* By H. Radcliffe Crocker, M.D. *Read April* 25, 1879.

ALBERT M., æt. 7 years, was brought to University College Hospital with the following history:—The father has had a cough for six years, said by some to be from bronchitis, by others phthisis. He is subject to spasmodic asthma, and is much thinner than he used to be. The mother used to be delicate, but has been in good health since her marriage. She has had three children, one of whom died recently, æt. 9 years. He had a rash something like the patient's, the glands of his neck were enlarged, the abdomen much enlarged, and towards the end of his illness pus was discharged from the navel; sores appeared on the abdomen after poulticing, and he suffered from diarrhœa.

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The patient is pale and delicate looking; has some slightly enlarged glands on the left side of the neck behind the sterno-mastoid, but nowhere else. The tonsils are swollen, and he has a cough; but there are no physical signs in the chest. He has never had any illness, except measles 3½ years ago.

About two months ago a small red patch, about ⅜ inch in diameter, appeared on the right side, just below the crest of the ilium; it itched a little when he was warm, and was bright red and slightly scaly, the scales being yellowish. Other spots soon came out on the other side, and on other parts of the trunk, so that within about ten days the trunk was thickly covered, the patches increasing in size, the largest being 1½ inch by 2 inches. It was more abundant on the back than in front. There were a few patches in the groin, extending about 2 inches down the thighs, and one or two on the arms, just below the axillary folds, but none on the limbs lower than this.

The patches now consist of pale red papules, not larger than a pin's head, and many are smaller. They are situated on a dull red surface, and after lasting two or three weeks fade, leaving fawn-coloured discolorations. On the most affected patches the appearance is that of an exaggerated cutis anserina of a reddish colour.

The child is improving under cod-liver oil administered internally and externally.

XLIV.—*Removal by Operation of a Large Rodent Ulcer of the Scalp.* By W. Morrant Baker. *Read April* 25, 1879.

THE patient who forms the subject of the present brief communication—J. W., æt. 60—first came under my care at St. Bartholomew's Hospital, in July 1873, with a nummular ulcer of the scalp, over the left parietal bone, of about 1 inch in diameter. The ulcer had a moist and red glazed surface, and sharply cut edges, with no induration of the base. It was painful, and the discharge from it was offensive.

The following history was given by the patient:—About 3 years before admission into the hospital, a small pimple, like a mole, formed on the scalp, and remained for a year

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with scarcely any alteration. Then it broke and began to discharge—at first blood and afterwards 'matter.' Of late it had much increased in size.

There was no history of syphilis, and no scars or sores were visible in any other part of the body.

I applied nitric acid to the ulcer on the scalp, and, on a subsequent occasion, Vienna paste, with much benefit. Before the ulcer was quite healed, however, the patient left the hospital, and was lost sight of on account, as he afterwards told me, of his living in another part of town.

I did not see him again until the latter part of 1877, when he was brought to the Medico-Chirurgical Society by Mr. Gaskoin. At this time the ulcer measured nearly 4 inches in length by 3 inches in breadth, but still preserved the same characters that led me four years previously to call it rodent ulcer.

The patient was re-admitted into St. Bartholomew's Hospital under my care March 14, 1878.

The ulcer now measured in its greatest diameter 4 inches, and had an irregularly oval outline. Near the central portion of the ulcer the pericranium was involved in the disease for a considerable extent, and here and there destroyed, so as to leave the bone exposed, or covered only by soft granulations. The edge of the ulcer was a good deal undermined, and the patient suffered much pain.

The ulcer was dressed for several days with iodoform, and soothed by the application of oxide of zinc ointment, but without real benefit; and, April 3, 1878, I removed about half the ulcer with the knife, cutting at a distance of about ½ an inch beyond its margin, so as to leave a healthy edge. Where the pericranium was involved, and where, therefore, I could not dissect up a layer of tissue of any size, I sliced off the diseased tissue as well as I could, and used the gouge lightly at a few spots where the knife was of no service.

After several vessels had been tied, the actual cautery was applied to the bleeding surface, as well as to the remaining portion of the ulcer, and the wound was dressed with iodoform.

The patient did very well after the operation, and it is noted by the Registrar, Mr. Macready, on May 14, that 'the part of the scalp from which the ulcer was dissected presents a fairly healthy granulating surface, with a healing border. The part of the ulcer which was left shows no improvement.'

May 15.—I dissected away the remainder of the ulcer,

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cutting, as before, at a distance of about ½ an inch beyond the diseased margin. I also cut away as much of the contiguous granulating surface as I thought would ensure a healthy border in this direction, scraping away a small part with a gouge where I could not dissect up the diseased tissue with the knife.

After this second operation the patient went on well, the wound granulating for the most part healthily. Two spots, however, which looked doubtful, each about the size of a sixpenny piece, were treated with chloride of zinc paste, the effect of which was the exposure of a small area of bone, from which a little scale subsequently came away.

August 4.—The notes state that at this date the granulating surface was level with the surrounding scalp.

Soon afterwards the wound was grafted; and, the grafts taking well, in the beginning of November the wound was nearly healed, and the patient was sent to the Convalescent Hospital at Highgate.

Dec. 12, 1878.—The patient was re-admitted into the hospital. The greater part of the wound had healed; but there were two or three small ulcers of suspicious appearance, varying in size from that of a split pea to a threepenny-piece.

These I removed with the knife, and without an anæsthetic, the sensibility of the parts having been much blunted by the previous division of the nerves in the first and second operations.

At the present time—February 21, 1879—the wound has almost completely healed. Only two or three small ulcerated spots now remain; their combined area being perhaps about that of a sixpenny-piece or a little more.

With one exception, these spots correspond with that part which was formerly the centre of the ulcer, and at which the disease had extended most deeply, so as to involve the surface of the bone.

An enlarged gland beneath the upper and posterior edge of the left sterno-mastoid muscle, to which my attention was drawn several weeks since, remains unaltered. The patient states that he noticed it, himself, above a twelvemonth ago, and does not think that of late it has at all enlarged.

The ulcer, after removal, was kindly examined microscopically by Dr. Thin and Mr. Butlin, both of whom are agreed as to its histological characters. These have been

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recorded by Dr. Thin in Vol. XXIX. of the 'Transactions of the Pathological Society,' p. 242; and are, he believes, those commonly found in the rodent ulcer, so called, of English surgeons.

Remarks.—I have ventured to bring this case before the Clinical Society on account of the good result which has attended an apparently almost hopeless operative procedure.

In undertaking the operation of removal, in two instalments, of more than 12 square inches of the scalp, I hoped to substitute for a malignant and gradually but surely extending ulcer a comparatively healthy and painless granulating wound; but I scarcely expected to obtain a nearly healed surface and a complete restoration of the general health which had been so much damaged by the local ulceration.

The disease is not yet quite eradicated. Possibly it never will be so. But the patient has been taken back, as to his ulcer, if one may so express it, to the state in which he was 6 or 7 years ago; and there may be a fair hope of completely staying the ulcerative process. The chief doubt as to this must lie, of course, in connection with the degree to which the bone is affected, and with the continuance of freedom from active disease on the part of the lymphatic vessels and glands. With respect to both these points, however, the present aspect of the case is encouraging.

The small portion of the ulcer which remains does not apparently affect the bone to a greater extent than it did nearly half-a-dozen years ago; and, although there are indications of affection of the lymphatic glands, there is nothing to show that the affection is at present of a malignant character.

Postscript (August 1, 1879.)—The wound is now almost completely healed; and the enlarged lymphatic gland remains in the same state as at the time at which the patient was exhibited to the Society.

XLV.—*An Eruption caused by Bromide of Potassium.*

By Robert William Parker. *Read April* 25, 1879.

FLORENCE B., æt. 8 months, first came under my observation at the East London Children's Hospital on April 18, 1879. She was a well-nourished, healthy-looking

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child, except for the eruption. The mother stated that the child had been ill some few weeks ago, and had been under the care of a doctor for about three weeks; with that exception, she had always been a healthy baby.

There were two more or less circular patches of diseased skin on the right cheek. The larger measured about three-quarters of an inch in its longest diameter; the lesser measured about half an inch. There were similar, but smaller, patches on two of the four vaccination scars, which the child bore on its left arm. The nates were thickly covered with similar patches, those on the right side being further developed (having appeared sooner) than those on the left side. All the patches assumed a more or less circular shape, and in places were confluent. The rest of the body was quite free.

The eruption had somewhat the appearance of a half-ripe raspberry. It was raised about one line or so above the level of the surrounding skin; its margins were abruptly defined, and the adjoining skin perfectly healthy. It seemed to consist of hypertrophied papillæ, covered over with a thickened, reddened epidermis. It was not tender to the touch. There was hardly any appreciable exudation from its surface. It much resembled a mucous tubercle, except that its surface was dry.

Remarks.—Suspecting it to be an eruption caused by bromide of potassium, I communicated with the medical man, who had sent it to me to the hospital. He was good enough to inform me that the child had been brought to him some weeks ago for what he then feared was meningitis, with swelling of the anterior fontanelle. In the course of a few days bronchitis set in, and the child was not expected to recover. After about three weeks, it did recover, and then this eruption began to come out as 'pimples, which rapidly increased in size.' 'The treatment consisted in the administration of bromide of potassium in 2 grain doses for about two weeks.'

I was not able to get any urine for examination, and am therefore unable to say whether it contained any bromide.

Note.—Since the date when the case was shown to the Society the eruption has been gradually fading. It dries up, a scab drops off, and a pigmented patch remains; the pigment also very gradually becomes absorbed. An occasional aperient and a tonic were ordered as treatment.

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XLVI.—*A Case in which a Biliary Calculus was removed by operation from the Gall-Bladder, and a cure resulted.* By Thomas Bryant. *Read May* 9, 1879.

ELEANOR B., a single woman, æt. 53, was admitted into Guy's Hospital, under my care, on July 17, 1878.

She had always enjoyed good health up to five years ago, when she noticed a swelling on the right side of her abdomen, nearly on a level with the umbilicus, but it was unaccompanied by pain. It steadily and painlessly increased for two years, when, it having then attained the size of an egg, she sought relief at a hospital, where the swelling was opened and some matter evacuated. The wound has, however, never healed, and for three years has been discharging a thin purulent fluid. She has become weaker, but in other respects her general health has been fairly satisfactory.

A year ago (1877) a second abscess formed below and to the outer side of the previous one. It was opened, and pus escaped, and the sinus is still discharging.

During the last year she has been losing strength, and so much so that she has not been able to make any continuous exertion. She has also occasionally fainted. Her bowels have been somewhat confined, but otherwise natural.

On admission.—The patient is a woman of middle height, well developed, but of a pale and sallow complexion. She complains of general weakness, but her bowels, tongue, appetite, and urine are natural. On the right side of her abdomen are two sinuses discharging pus. One is on a level with and about 3 inches to the right of the umbilicus, and the second 2 inches lower down and about 1 inch above the anterior superior spinous process of the ilium. A probe readily travels between the two openings, and the sinus is supposed to run between the muscles.

July 22.—The sinus between the two openings was laid open upon a director, and was found to have passed, as suspected, beneath the external oblique muscle. There was no pent-up pus to let out.

After this operation everything went on well, and the wound steadily granulated, the discharge from it being simple pus.

On August 10, however, the dressings became saturated

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with a yellow mucoid fluid, and on their removal about half an ounce of what was clearly bile escaped. The fluid was carefully tested, and gave bile reaction.

The discharge of bile continued daily, although it varied much in quantity. On one occasion it would merely stain the dressing, and at another saturate everything.

In this way the case went on for eight weeks, the patient's general condition improving under tonic treatment. On October 1, a careful examination was made, and it was thought that, with a probe passed in an upward and inward direction towards the ribs for about 2 inches, something solid could be felt, and it was considered probable that this might be a gall-stone. An exploratory operation consequently was determined upon.

On October 8, the patient having been brought under the influence of an anæsthetic, a probe was introduced into the sinus, and a calculus struck at a depth of about 2 inches. The sinus was then carefully enlarged, upwards and inwards, and, guided by the finger, a calculus removed by means of a pair of forceps and a lithotomy scoop. The stone was evidently resting in the gall-bladder which surrounded it, and the nipple-like projection at its lower end corresponded with the orifice of the gall-duct. The stone measured 1¼ inch in length and three-quarters of an inch in breadth. (See plate ii., fig. 2.)

No untoward symptoms followed the operation, although about half an ounce of bile escaped daily from the wound. In one month, the report states, the patient had much improved in health. Appetite good, bowels regular. The wound, however, seemed to close very slowly.

On November 23 a Sayre's plaster of Paris splint was applied with the view of keeping the abdominal muscles and contents quiet, and within a month from that day all escape of bile ceased, and the parts slowly healed. On February 4 the splint was removed, and on February 30 the patient left the hospital well in all respects.

Remarks.--This case well illustrates one of the ways by which a biliary calculus may be got rid of by natural processes, and the value of the surgical art applied as Nature's handmaid. For, without doubt, in the case recorded, there was, *at first*, suppuration around the gall-bladder which contained the calculus, and at a later period burrowing of the matter towards the external surface of the body and its appearance as a chronic abscess in the way

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which has been related; and *secondly*, there was a direct communication between the interior of the gall-bladder and the external parts of the body, since bile itself escaped through the abdominal sinuses that have been described.

In the operation I performed, moreover, the probe, introduced from without, struck the calculus, and when the sinus was laid open the calculus was enucleated from the gall-bladder itself by means of my finger and a lithotomy scoop; the soft velvety feel of the lining membrane of the cavity from which the stone was removed enabling me to speak with some confidence on this point.

The operation, it is to be remarked, was one by which natural processes were simply helped and expedited, for it is more than probable that, if the case had been left alone, in the course of months or years the calculus would have escaped externally, in such a way as has been demonstrated by our late distinguished member Dr. Murchison and five other contributors to the past volumes of the 'Pathological Society's Transactions.'

At the same time, I believe the surgical interference employed was right and justifiable, for although natural processes of themselves might have been sufficient to complete the cure, there was equal reason to fear that during the lapse of the unknown period of time which this process would require, other abdominal complications might have arisen by which a very different result would have been brought about.

Indeed, I have been induced to bring this case before the Society as an encouragement to surgeons to apply their art in like or allied cases, having a firm belief that the benefit of surgical assistance is as well displayed in the removal of a gall-stone impacted in the gall-bladder, when giving rise to local irritation and inflammation, as in a previous communication to this Society I had the pleasure of showing it might be when the stone is impacted in the small intestine. I feel convinced that the suggestion of Dr. Thudichum, which I had the pleasure of listening to twenty years ago (Medical Society of London, Oct. 1859; *Brit. Med. Journ.*, Nov. 19, 1859), 'that gall-stones might be removed from the gall-bladder through the abdominal walls,' is under certain circumstances reasonable and scientific; that is, when the stones by their presence are setting up inflammatory and suppurative changes about the gall-bladder without any obstruction to the bile ducts, as illustrated by

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the case I have to-night recorded; as well as in that more serious class of cases in which the common or cystic bile-duct is obstructed, and dropsy of the gall-bladder with jaundice complicates the case, as illustrated by the case of Dr. Marion Sims, operated upon April 1878, *Brit. Med. Journ.*, June 8, 1878; and that of Mr. G. Brown, operated upon January 1878, and reported *ibid.*, December 21, 1878.

XLVII.—*A Case of Spondylitis Deformans.* By W. Allen Sturge, M.D. *Read May* 9, 1879.

JAMES A., æt. 26, single, worker in artificial flowers, was admitted as an out-patient at the Royal Free Hospital in September 1878, complaining of pain and stiffness in his back.

His mother suffers very much from rheumatism in her back and limbs. A brother has had one very severe attack of acute rheumatism, and has suffered from chronic rheumatism ever since. A second brother has 'gout' very badly in his hands and feet. A sister is subject to very bad sick headaches.

His own health was good prior to his present illness. Ten years ago he had an excoriated sore on the penis, which does not appear to have been followed by secondary symptoms. Eight years ago, shortly before the onset of the present illness, he had a discharge from the urethra. Denies having run any risk of contracting gonorrhœa for some months before. According to his own account he used to be a strong up-standing man, a rapid runner, and more than usually upright in his figure.

Eight years ago there was a sudden onset of pain in the small of his back, which prevented him from stooping, or, if he managed to stoop, made it difficult for him to rise again. It was so severe that 'it took his breath away.' This pain has rarely entirely left him since that time, and he has had in addition pain in the hips and knees. During the last few years his figure has been gradually altering; he has found that he cannot stand up as he used to do. His back and neck have been getting stiff, rendering it difficult for him to stoop forward, or to turn his head to one or the other side. He has noticed, also, that for some years his chest has been getting stiff, so that it does not move properly when he

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breathes. The legs, too, have been getting somewhat weak, the right rather more so than the left. From time to time there have been pains in the arms, rendering it somewhat difficult for him to move them about freely. No history of a fall or of accident of any kind.

At the present time he is a somewhat anæmic and weakly-looking man, about 5 feet 5 inches high. The spinal column is remarkably fixed throughout. The lumbar and dorsal regions together form a curve with the convexity backwards; but the angle between the sacrum and the last lumbar vertebra appears to be more acute (backwards) than in the normal condition; for the spine as a whole is on a plane much further back than that of the sacrum. A plumb-line dropped from the most projecting part of the spine falls several inches behind the buttocks; the lower part of the abdomen projects somewhat forwards, whilst the legs are placed somewhat backwards in order to catch the centre of gravity of the body. The curve in the spine is a regular one of large radius, and there is nothing in its appearance to suggest angular curvature. The neck is bent somewhat forwards, which causes him to poke the chin forwards. If the spine be tapped pretty firmly in the dorsal region he says that it gives him pain in the cervical region. Tapping in the cervical region itself is, however, not painful; nor is there any tenderness in the lumbar region. When he stoops forwards to the utmost extent, the knees being straight, he can only carry the tips of his fingers to about 4 inches below the knees. The flexion of the spine in doing this appears to be almost entirely confined to the lower lumbar region, all the rest being held quite rigid.

The cervical part of the spinal column is very stiff. Flexion of the head forwards is apparently only performed by a slight movement of the upper two or three cervical vertebræ. It is sufficient to relax the skin beneath the chin, but falls very far short of bringing the chin down to the sternum. The movement of the head backwards can be performed in about a corresponding degree; but lateral movement towards the shoulders is almost *nil*. Rotation of the head can be effected with greater ease than these other movements, but even this is very deficient. In rotating to either side, the head is thrown somewhat back and the chin up.

The thorax is very rigid. The breathing is almost entirely abdominal. When he takes a deep breath there is a

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slight movement of expansion, but scarcely any of elevation. The chest is flat; the heart beats in the fifth interspace in the nipple line, sounds healthy. There is some hyper-resonance over both lungs; but the superficial cardiac dulness is not obliterated. Breath sounds fairly healthy.

Liver dulness begins in the fifth interspace in nipple line. It does not extend below the margin of the thorax.

Appetite good, bowels regular, no headache; the movements of the limbs (including those of the clavicles) are free in all directions. He complains from time to time of 'rheumatic' pains in his right leg.

Ophthalmoscope.—There are in the right eye adhesions of the iris, and a good many patches of uvea on the front of the lens. He says he had an inflammation of that eye about six months ago. For this he was salivated, but without result. He then placed himself under the treatment of another medical man, who looked upon it as 'rheumatic,' and cured it for him.

He says that he had had a previous attack of the same kind about six months before.

Remarks.—The conditions here present strictly correspond with that which has been described under the name of spondylitis deformans, and which is apparently a form of rheumatoid arthritis. The post-mortem changes were described by Professor R. W. Smith in an unpublished paper read by him before the Pathological Society of Dublin between twenty and thirty years ago, and quoted by Dr. Adams in his work on 'Rheumatoid Arthritis.' More recently they have been described by Dr. von Thaden, of Altona, in the fourth volume of Langenbeck's 'Archive.' The changes are very like those which occur in other parts of the body, viz., absorption of the articular cartilages, nodular growth in the articular surfaces of the bone, ivory-like appearance of the bone, to which must be added absorption of the intervertebral cartilages and the establishment of bony anchylosis between adjacent vertebræ. The second cervical vertebra is particularly liable to become affected, the odontoid process becoming considerably hypertrophied; hence the stiffness of movement in the head seen in the present case.

The disease of the spinal column may coincide with rheumatoid affections of other joints; but quite as frequently it is for a long time confined to the spinal column, or to the spine and the costo-sternal articulation.

Leyden, in his 'Clinical Treatise on Diseases of the Spinal

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Cord,' says that the disease is usually one of later, middle, or advanced life, and that it has no connection with gout, syphilis, scrofula, or tubercle. Todd, however, met with a case in a man 25 years old; and he describes also the case of a young girl with chronic rheumatism of all her joints, in whom anchylosis of the whole of the spinal column had taken place. Eulenberg also met with an example of typical spondylitis deformans in a child of 12 years only. The bony outgrowths of the vertebræ may encroach upon the spinal canal; but no case is on record in which paralysis has been traced to this cause. Virchow, however, describes in a paper in his 'Archive' how, in a holiday tour, he came across some bones in the charnel-house of an old monastery which could not have been less than from three to four hundred years old, and which displayed the characteristic change of rheumatoid arthritis. Amongst others, the vertebræ were much implicated by the disease, certain vertebræ were anchylosed, and the spinal canal in some of them was reduced to such narrow dimensions by the invasion of bony outgrowths that it could not admit the little finger. Virchow states it as his opinion that in this case paralysis must have been infallibly produced by the pressure on the cord, resulting from this invasion of the canal.

A case apparently very similar to that which forms the subject of this communication was described by Dr. Hilton Fagge in the 'Pathological Transactions' for 1877. The patient was a man 34 years of age, in whom the arches and spinous processes of the vertebræ were firmly united by bone, the ribs being also firmly anchylosed to the vertebræ both by the head and by the tubercles. In addition to the spinal condition, there was in this case anchylosis of the right hip joint. The patient died of pulmonary disease.

XLVIII.—*Case of Sutural Junction of the Ulnar Nerve, fifteen weeks after its complete severance by a Roofing-slate—Early Restoration of Function.* By J. W. Hulke. *Read May* 9, 1879.

THE surgical union of severed nerve-trunks has hitherto been so rarely practised that I have had no hesitation in complying with our President's desire that the following

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case, lately in the Middlesex Hospital under my care, should be brought under the notice of this Society.

The propriety of immediately joining with sutures a severed nerve-trunk exposed in a fresh wound is so obvious that it has probably been done oftener than is known from published cases.

Clearly such early junction offers better prospects of restoration than where it is effected after an interval; but even here the results already obtained have been satisfactory in a degree never anticipated, and they give to the sutural union of nerves a legitimate value as a remedial measure from which the restoration of an otherwise incurably crippled limb may be hopefully expected.

The main interest of the present case lies, I think, in the long interval of time—fifteen weeks—between the severance of the nerve and the sutural approximation of its ends, and also in the very early date—about three or four weeks after—when the first return of sensitiveness was noticed in the parts before absolutely numb.

On October 2, 1878, at 1.15 P.M., at Walmer, in Kent, a bald, white-haired, wrinkled-faced blacksmith, æt. 53 years, was caught in a hurricane. A slate, torn from a roof, struck him on the head, and stunned him, and a tree fell upon him. On regaining consciousness, he thought that his left hand was crushed—'it felt so numb, and was so helpless.' When extricated from the wreck of the tree, no wound was found in the hand, but a deep ragged cut across the inner side and front of the elbow. At the left of the vertex was a scalp-wound. After the dirt filling them was as much as practicable removed, both wounds were simply dressed—that in the scalp soon healed, and it did not give any further trouble; but the cut at the elbow festered, and it closed very slowly. This wound was painful from the first, and as it scarred the painfulness increased, and assumed a neuralgic character. The forearm and also the arm wasted. His sleep was broken, and his health suffered. The powerlessness of the arm increased. From the time of the injury he had been quite unable to do any work.

In this state he was admitted into the Middlesex Hospital on January 27 last. Associated with the symptoms just mentioned was absolute anæsthesia of the little finger, ulnar side of the ring finger, and hand in the distribution of the ulnar nerve. These fingers were colder than the others, the little finger was purplish and glossy, and both were slightly

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contracted. Crossing the inner condyle of the humerus, from the olecranon nearly to the tendon of the biceps muscle was a red, raised, exquisitely tender scar. The lightest touch on this provoked severe pain, which darted up the inner side of the arm to the shoulder, and was also felt in the numbed fingers and hand.

On Feb. 6 he was placed under the influence of chloroform. An Esmarch's bandage was put on. The ulnar nerve, where it crosses the internal intermuscular septum—as it could be felt here—was exposed and traced downwards to the scar. It was found to have been completely divided, and the two ends were separated by a wide interval. The upper end, bulbously swollen, and dragged out of its course by the shrinking scar, was lying on the inner and front aspect of the condyle and intimately attached to it. The lower end was in its normal situation; it tapered to a blunt point. In both ends of the severed nerve were numerous particles of slate; most of these were very minute, but some were larger, and a couple were nearly 3 by 2 mm. in size. Both ends were removed with a sharp scalpel. In doing this, care was taken to make clean sections accurately transverse to the length of the nerve. A splinter embedded in the lower end, not apparent externally, necessitated the removal of a second slice from this end. The interval between the ends now amounted to nearly three-quarters of an inch. In order to lessen this, and to facilitate the approximation of the sectional surfaces of the ends, the sheath about the upper end was seized with two forceps, and the nerve stretched by strongly drawing it downwards. The ends were next fastened together with four fine silk stitches passed through the sheath; their sectional surfaces were almost in contact, but absolute contact was not attainable, owing to the original retraction and the large extent of damaged nerve necessarily cut away.

On the removal of the Esmarch's bandage, the use of which had greatly facilitated the exposure of the nerve and subsequent steps of the operation, slight arterial bleeding occurred. It ceased when a small vessel behind the inner humeral condyle was twisted. The limb was fixed, extended upon a splint; antiseptic measures were observed during the operation and the subsequent treatment.

It is unnecessary to report the daily progress. The neuralgia ceased at once, and it did not return. At the end of a fortnight the splint was laid aside, and he was allowed

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to get up, carrying the forearm slightly flexed in a long sling. Towards the end of February he spontaneously said that the numbness in the fingers was less, and that he felt when they were touched. Until then I had purposely abstained from testing the innervation of the fingers, because I wished to avoid doing or saying anything that might prejudice his judgment, and on testing their sensitiveness I could not confirm his assertions.

A few days later, however, I could no longer doubt his statements. At the beginning of March, on testing the tactile sensitiveness of the fingers with the point of a pencil —his eyes being covered so as to make it impossible for him to see what was being done—he was always aware when the point was drawn lightly over the little finger and ulnar side of the ring-finger. He indicated correctly which finger was touched, but often failed to recognise rightly the exact spot. The sensitiveness rapidly improved, and on March 14, feeling able to undertake light work, he was allowed to return home. He had lost in great measure the feeling of powerlessness in the hand, forearm, and arm, and he was wholly free from pain. Tested now with the pencil-point, when this was firmly pressed in single contact on any part of the surface of the fingers and hand corresponding to the distribution of the ulnar nerve previously numb, he invariably referred the contact to the right spot, but he did not always perceive correctly a single light contact. When, however, the point was drawn lightly over the surface, so as to multiply the points of contact, particularly when the direction of this crossed the axis of the finger, he always perceived it correctly.

Looking to the progress made in so short a time, I think it not unreasonable to expect that a high degree of restoration will be finally attained.

July 28.—It was reported to me about a fortnight since, that the man had been for a long time working as smith at his forge.

XLIX.—*Papilloma of the Bladder—Excision—Death.*

By A. T. Norton. *Read May* 9, 1879.

M. C., æt. 34, married, and the mother of six children, had been healthy until last February, when she slipped

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down a coal shoot and injured the pudenda. She referred her present condition to the accident.

On admission into St. Mary's Hospital under my care, on December 5, she was thin and pale, and evidently suffering from the effects of the long-continued hæmorrhage of which she complained. The urine passed was always of a dark red brick colour, from the large quantity of blood that it contained, and, after remaining for a while, deposited in large quantity a mortar-like mass of mucus and phosphate. She frequently passed small irregular pieces of phosphate of lime calculus, as large as a No. 3 shot, and complained that she had a constant desire to pass water, yet the bladder never seemed empty. She stated that she always suffered spasmodic pains after passing water, and that it seemed to her that something was forced downwards against the opening of the bladder, and that generally a quantity of pure blood escaped after the water.

I examined the bladder with a sound, expecting to find a phosphatic calculus, but there was none. I, however, recognised, by pressing the sound in the bladder towards my finger in the vagina, that the bladder was distinctly thicker than in a natural condition.

On finding that there was no calculus, but that the bladder was increased in thickness, I concluded that there must be a growth on the posterior wall of the bladder, or that the bleeding must be accounted for by chronic inflammation of the bladder with increased thickness and with ulceration. As I could not determine which of these two diseases was present, I ordered milk diet and prescribed a mixture containing uva ursi. The treatment, however, had no effect, for the pain and bleeding continued, and the patient was evidently affected by the loss of blood.

On January 3 the patient was put under chloroform and I inserted the little finger through the urethra into the bladder, but failed to detect the condition. I then inserted the right index finger, the urethra having been dilated by the passage of the little finger, and discovered a growth in size about 1 inch square, rough and coated with the salts of the urine, not much raised above the mucous membrane, but very hard and situated on the floor, about half an inch from the sphincter of the bladder.

The digital examination gave me the idea that the growth was epithelioma, for it was more dense and more nodulated than a papilloma might be expected to be, and it

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had not the velvety surface which a papilloma usually has. I may here remark that the growth turned out on microscopical examination to be a papilloma; and I may further add, as a point worthy of consideration in the future diagnosis of such growths of the bladder, that on each of the two occasions on which I examined the bladder with the sound I could distinctly trace the deposit of the salts over the region of the tumour when I pressed the sound upon the bladder, though I did not take very much notice of the fact at the time. It is evident to me now that the fringe-like surface of a papilloma must always form an attractive surface for the deposit of the salts of the urine, and that since a large number of growths of the bladder turn out to be papillomata, such a coated surface should be sought for when, in the absence of a calculus, the symptoms indicate the presence of a growth. The coated surface might be detected either in the male or female with the finger in the rectum or in the vagina.

In diagnosing tumours in the bladder of the male any additions to present means of detecting the growth must be of considerable value; while in the adult female all doubt as to the disease may be easily set aside by digital examination through the urethra—a method of investigation which I think is not sufficiently often adopted.

To return to the case. Having, by digital examination, ascertained the cause of the symptoms, and having satisfied myself as to the shape and size and exact position of the tumour, the question of treatment presented itself for consideration. Either the tumour must be removed and the patient submitted to the risks attendant upon a severe surgical operation, or she must be left to endure the tortures brought about by the contraction of the bladder upon the growth after micturition, which in such cases is incessant, and with the certainty of an early death from the hæmorrhage or from blood poisoning. I concluded that I could remove the growth through the vagina without approaching too near the peritoneum and without including the ureters in the section, and I saw no reason why I should not reform the bladder out of the vaginal wall and retain the sphincter of the bladder intact. If the growth should prove to be a papilloma it would probably never recur, and if an epithelioma, its complete removal might altogether eradicate the disease or the date of its recurrence might be remote.

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It was for me to lay the case fairly before the patient, and to act as she might decide, and she, after consideration with her friends, decided in favour of the operation.

On January 10 I performed the following operation. The spring scissors were inserted, one blade into the bladder, nearly up to the tumour, and the other into the vagina, and were closed; the front wall of the vagina was then incised centrally to within half an inch of the uterus, and the vaginal wall, which was found to be not incorporated with the growth, was dissected from the bladder; next a pair of polypus forceps was made to grasp the tumour in its whole length, and by forcible traction the diseased mass was brought almost externally and removed by encircling it with the spring scissors; bleeding was arrested by actual cautery, and the lateral flaps of the wall of the vagina were approximated with silver wire sutures; to prevent further hæmorrhage a catheter was inserted, and the bladder compressed by plugging the vagina. Some blood escaped during the same and the following days, but not to an amount of importance.

On the following day the temperature was 97·8°, and the patient complained of no pain; but there was continued retching, which was thought to be the effect of the chloroform.

On the 14th, that is, four days after the operation, the retching still continued, which produced abdominal pains, but there was no pain in the region of the bladder; the temperature was 99°. On the 16th the pulse was 120, and the tongue furred, but the temperature was normal. She continued to vomit, and was refusing food. The vomiting, which had been persistent throughout, was, I suppose, due to the nerve injury, and was allayed by subcutaneous morphia injections; but her refusal to take food for fear of inducing vomiting was a source of danger. There was no tympanites nor peritonitis; but there were gastric pains due to the vomiting; the small quantities of milk with lime-water, beef jelly, Liebig's food, &c., which were taken, were not retained. The temperature was now 96·5°.

On the 19th five-grain doses of quinine were ordered three times a day, and the vomiting ceased. She now took food in small quantities every hour with brandy, egg, &c. The temperature rose to 97·5°; the pulse 85; respirations normal; she slept well, and was considered well on the road towards recovery. The bladder and vagina had been continually cleansed with carbolic acid solution, and pain had

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disappeared. On the 20th, 21st, and 22nd the notes are unimportant. She was throughout making good progress. She was cheerful, and entered freely into conversation with her husband and relatives. On the night of the 22nd, at 7 P.M., she took about five ounces of infants' food made with milk, and at 7.45 five ounces more; at 8.30 she seemed inclined for sleep, and her husband left her. She now vomited about an ounce of green bile, and soon after went off into a doze. At 9 o'clock she was apparently still asleep, and at 9.10 the nurse observed that her face was blanched, and on speaking to her received no answer. Some brandy was given, but she did not swallow it, and she died at 9.26.

Post-mortem Examination.—Heart healthy; right side half full of blood; left side nearly empty; slight clot, half black, half discoloured; greater part of blood fluid.

Incision in posterior bladder wall extending up beyond and between the ureters, but the orifice of neither included; the wound green or sloughy upon the surface, but healthy immediately beneath the surface; phosphatic deposit scattered over the wound, and also in the orifices of the ureters.

The mucous membrane of the bladder was deeply congested, but of normal consistence. The pelvic fascia and peritoneum uninjured. No thrombosis of vesical or pelvic or iliac veins, and no pelvic cellulitis or peritonitis.

Microscopic Examination of the Tumour.—The greater part of the growth consists of an infiltration of the tissue of the bladder, with small round cells. The surface is covered with columnar epithelium (modified), several layers deep, and the lower surface of this is evenly disposed, and nowhere shows a tendency to infiltration, whilst the free surface is papillated. It is very vascular; the vessels generally consist of thin-walled capillaries which run for the most part vertically from the surface. Several of them are thrombosed, as is evident by the changes that have taken place in the blood—in some the blood discs are irregular; in others they have broken up, and are represented by granular *débris*.

From the post-mortem examination it appears that the patient died from syncope, and at a time when she was recovering from all the complications of the operation which would be likely to bring about syncope.

Remarks.—I have not been able to find on record the report of any similar operation, and I have therefore not the opportunity of comparing the symptoms with those of another case; but judging from injuries of the bladder, and from ope-

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rations upon extensive vesico-vaginal fistula, it seems to me that the nerve complications in association with the very severe vomiting were unusually severe, and such as need not be expected to occur in any future similar operation. I would suggest the use of the knife instead of scissors in the removal of the growth, as probably less injurious to the nerves, though more liable to be followed by hæmorrhage.

There is another matter worth the consideration of the surgeon. If the growth extended beyond the entrance of the ureters into the bladder, would it be wise to remove it? In reference to a decision on this point I examined the relation of the peritoneum to the wound which I had made into the bladder, and formed the opinion that I could have removed with safety, so far as the peritoneum was concerned, a tumour nearly twice the length and twice the breadth. In such an operation the ureters would be included in the wound, but I presume that their power of expulsion of the urine would be sufficient to maintain the patency of the orifices. In the case which I have described the orifices of the ureters were close upon the wound, and were influenced by their proximity; for they were dilated by an irregular incrustation of the urine salts, which extended up the canals for about a third of an inch.

With regard to the performance of an operation in cases of tumour of the floor of the bladder in the female, I would say that, though it is to be regretted that the case above narrated terminated unsuccessfully, the experience derived therefrom does not show that the operation is contra-indicated, and that I should therefore consider it advisable to remove a single papillomatous tumour or an epithelioma.

Since forwarding the notice of communication of this case to the Clinical Society a second case of tumour of the bladder has come under my care. A complete removal has been accomplished without an untoward symptom. The operation was similar to that of the first case, but the tumour, which was more elevated than the former, was situated in front of the bladder. It was found necessary to cut through the base of the bladder from the urethra, in order to thoroughly extirpate the disease. The opening in the bladder was allowed to remain for a month, so that the seat of disease could be examined, and then closed by the ordinary method. The tumour—nearly 1 inch long, about $\frac{1}{2}$-inch wide, and $\frac{3}{4}$-inch above the level of the mucous

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membrane—did not infiltrate the tissue of the bladder. Its structure was that of a fringed papilloma, the fringe floating out freely when examined under water.

L.—*Case of Intussusception of the Ileum into the Cæcum through the Ileo-cæcal Valve, associated with a Polypoid Tumour—Laparotomy on the fifth day—Great immediate relief—Death on the seventh day.* By SIDNEY COUPLAND, M.D., and J. W. HULKE. *Read May* 23, 1879

ELIZABETH T., æt. 16, a carpet sewer, was admitted into the Murray Ward of the Middlesex Hospital on Tuesday evening, March 11, 1879. She was a spare, fair-haired, fair-complexioned, anæmic girl, looking far older than her years, and she was in an excited and hysterical condition. When in bed she kept throwing herself from side to side, crying out with pain in the abdomen, and constantly begging for relief. She made no other complaint than this. On examination, however, there did not appear to be much tenderness, but palpation revealed a distinct swelling and considerable resistance in the right iliac region, where also there was dulness on percussion. The patient was wholly unaware of the presence of any swelling; and, it being impossible to accurately define the extent of the swelling in her then excited state, chloroform was administered, and the belly examined carefully by Messrs. Fardon and Webster, the resident medical officer, and the physician's assistant.

There was no undue general distension of the abdomen, but a well-defined, smooth, and somewhat cylindrical swelling was clearly made out at the upper part of the right iliac fossa, running transversely in a direction parallel to the iliac crest, from which it was distant about 2 inches. An area of dulness extended from this tumour in front and below, as well as behind it, so that the whole of the iliac fossa and a portion of the hypogastric region were dull. A rounded swelling, perfectly resonant, could also be felt beneath the recti in the umbilical region.

The tongue was covered on the dorsum by a thin creamy fur.

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The temperature was 98·6°; pulse 88.

A few ounces of urine were withdrawn by catheter. It was of specific gravity 1040, acid, free from albumen, but gave a pale, purplish reaction with nitric acid.

A simple enema was ordered; and a linseed poultice, sprinkled with opium, was applied to the abdomen. An opiate draught was also administered.

No clear or coherent account being obtainable from the patient as to her illness, it was not until the third day from her admission that the following facts were elicited from her mother. Her family history was good, nor had the patient suffered from any serious illness until two years ago, when she had an attack of abdominal pain, of a colicky nature, and vomiting, lasting for a few days. Since then, to her present illness, her bowels had been regular. She was very subject to hysterical attacks. Her menstrual functions were natural.

'On Friday, February 28, 1879, she had slight colicky pains in the abdomen, with vomiting. For this she was compelled to keep her bed for two or three days, after which she was attended for a week from a dispensary, and on March 9 felt fairly well. Her bowels had been opened daily; there had even been a slight tendency to diarrhœa. On Monday, the 10th, the colic returned, and with great severity, accompanied by pain in the back, and severe vomiting, so that on the next day (the 11th) she sought admission into the hospital. Her bowels had been opened naturally on the morning of the 10th, but not since; no blood was said to have been passed.

At midnight she still continued to cry out with pain; but there was no distress in her features. She was, however, continually vomiting clear mucoid fluid, this having commenced after the chloroform was given. A hypodermic injection of morphia was given her, and she passed a fair night.

March 12, 9 A.M.—T. 99°, p. 96. 'The abdominal pain is less constant; it recurs, however, in paroxysms. Vomiting continues, of a greenish fluid. The tongue moist and thinly coated. There has been no passage from the bowels since the enema.'

At 1 P.M. Dr. Coupland saw the patient. The swelling in the iliac region was well defined, smooth and firm; and the dull area had the same limitation as on admission. There was no distension of the abdomen; the flanks were

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flattened. The vomiting continued at intervals, but not in large amount. It was still of the same biliary character.

The diagnosis arrived at was that of fæcal accumulation, and probably typhlitis. It was thought to rest between this and intussusception. The history, as given by the patient, together with the comparative absence of severe symptoms, led to the (as it proved erroneous) conclusion that the less grave condition was the cause of the obstruction. An opiate draught was given every four hours. There was retention of urine, and 10 ounces were withdrawn by catheter. Its specific gravity was 1040.

The next morning another enema was given, but was returned unchanged. The vomiting persisted throughout the day, and the retention of urine also continued; but in the evening she passed urine naturally. She appeared more depressed; the pulse was 116, temperature 97·6°. The pain was less, and there was no distension of the abdomen, and no drawing up of the legs.

On the 14th she was obviously weaker, exhausted by the persistent vomiting, which was still purely 'bilious' in character. She had only been able to take milk with ice, and even this was rejected. The abdomen had become generally tumid and tympanitic, and the local swelling remained unchanged. Dr. Cayley now saw the case in consultation, and concluded that the swelling was probably due to fæcal accumulation. By his advice, a large soap-and-water injection was given by a syphon tube from a height of 2 feet. Three-and-a-half pints flowed readily, when she complained of pain; and when four pints had been injected, it began to escape by the side of the nozzle. The injection was therefore discontinued. It was immediately and involuntarily returned, its colour being changed to a brownish plum tint, the last portion being darker than the first. It had a most offensive penetrating odour—more the odour of gangrene than of fæcal matter, of which, however, it seemed to contain a trace. No blood corpuscles could be found in it.

At 9 P.M. her condition being worse—pulse feeble, 132; temperature, 100°; hands and arms cold; and the vomiting continuing—she was seen by Mr. Hulke with Dr. Coupland, the idea of fæcal accumulation being now regarded as less tenable than that of intussusception. Digital examination of the rectum and vagina revealed nothing. A consultation was called at 10 o'clock, when Mr. Nunn and Dr. Cayley were also present, and it was finally decided, in view of

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the patient's increasing exhaustion, and the probability of the case being one of intussusception of the ileum into the cæcum, that an exploratory incision should be made, and the intussusception, if present, should be withdrawn, or if this were not possible, that an artificial anus should be made above it. At the same time, it was feared, from the offensive character of the enema which had been returned, that sloughing of the bowel had already set in.

At 11.30 P.M. the patient was placed under the influence of ether. An incision was made in the median line for about 4 inches between the umbilicus and pubes. On opening the peritoneum a quantity of pinkish fluid escaped. Some congested and dilated coils of small bowel presented, and by carefully tracing these down an intussusception was found, apparently of the ileum, through its lower end, into the cæcum. It was somewhat deeply placed behind the distended coils in the right iliac fossa, and by holding these aside the intussusception was clearly brought into view. Although all reasonable force was used by traction with one hand, assisted by manipulation of the ensheathing portion with the other, it was found quite impossible to reduce the invagination. Extrication being thus impossible, the ileum immediately above was secured in the lower angle of the wound with stitches and opened. Hardly any fæcal matter escaped. The patient, who had been under ether for nearly an hour, became very excitable and noisy when removed to bed. The vomiting, however, was less, and it finally ceased about three hours after the operation, when she fell asleep. Nutrient enemata were ordered every three hours.

Great relief followed the operation. During the next twenty-four hours, she was free from pain and vomiting, was cheerful, and complained of feeling hungry. Her pulse, however, was small and very rapid, 152; and the temperature ranged between 101° and 102°. There was a free but not copious discharge of fæcal matter from the artificial anus. Towards evening the breathing became rather laboured, and sonorous rhonchi could be heard all over the chest. The enemata were no longer retained, so a small quantity of wine, as well as Brand's essence, was given by the mouth. She passed a restless night, again began to suffer pain in the abdomen, and at 9 A.M. on the 16th appeared extremely prostrate, features pinched, extremities cold, and pulse almost imperceptible. She died about noon, thirty-six hours after the operation.

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The post-mortem examination was made on the following day, twenty-six hours after death. There was slight adhesion between the lips of the abdominal wound, and also between the peritoneal surfaces in contact around the portion of bowel which had been brought out and opened. The false anus was in this manner completely shut off from the abdominal cavity. On laying open the abdomen, the coils of the ileum were seen to be slightly distended with flatus. All of them were vividly injected, especially along their contiguous surfaces, which were further slightly coated with soft lymph, this being most abundant between those coils which lay in the immediate vicinity of the wound. The artificial anus had been made at a point 9 feet below the termination of the duodenum, and 3 inches beyond this opening the ileum was invaginated into the segment of bowel next below it, the ensheathing portion having a swollen upper rounded border, which encircled the entering portion like a large collar, thrown into deep transverse folds. The wrinkled and puckered free border of the ensheathing portion of ileum—opposite to the mesenteric attachment—measured 6½ inches. The cæcum, moderately distended by a firm solid mass, retained its natural shape, the vermiform appendix lying closely applied and adherent to its posterior surface. The sacculi of the cæcum were well defined, and so also was the longitudinal band of muscular fibres running along its outer surface, whilst at a point about 10 inches from its cul-de-sac the solid mass within it appeared to terminate. Some shreds of recent lymph occurred between the surfaces of the cæcum and the last portion of ileum, and in addition a short epiploic appendage passed between the inner border of the cæcum and this part of the ileum, binding these portions of bowel together by an adhesion evidently of old date. The parts being removed, the cæcum and ascending colon were laid open by an incision along their outer border. A quantity of grumous blackish-brown foul-smelling fluid escaped, and there appeared lying within the cæcum a large brown-coloured sausage-shaped mass of intussuscepted intestine, firmly fixed at the ileo-cæcal valve. The shape of the mass was peculiar; for the portion filling the cæcal cul-de-sac was of considerable size, measuring 5 inches in circumference, and it gradually tapered to its extremity, which was less than 3 inches in circumference, the mass thus having a blunt conical form. It was, moreover, curved on itself in a sickle-shaped manner, so that its

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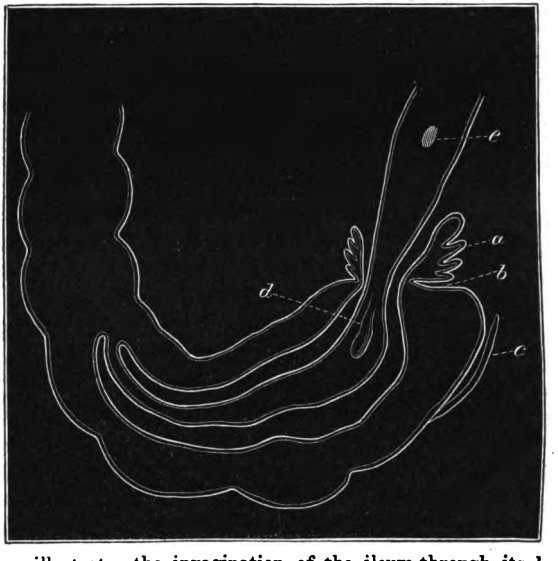
outer border was much longer than the inner, and the surfaces were marked by deep rugæ and sulci radiating from the concavity to the convexity of the mass. The orifice at the extremity of this invagination was situated obliquely behind the apex of the cone. The length of the convex border from the ileo-cæcal valve to the orifice (including the sulci) was 15 inches, and the length of large bowel occupied by the mass was 12½ inches (measured on convexity). At the ileo-cæcal valve the invaginated bowel presented on its inner or mesenteric aspect a deep groove of ulceration, at the



The diagram illustrates the invagination of the ileum through its lower extremity, and through the ileo-cæcal valve. The thick line represents the serous coat, the thin line the mucous coat of the bowel. *a.* The lowermost portion of the ileum thrown into folds, and forming an ensheathing collar to the invaginated gut. *b.* Seat of the ileo-cæcal valve, where the entering portion of invaginated gut was tightly constricted. *c.* Appendix vermiformis. *d.* Polypoid tumour, springing from the ileum, and filling the upper part of the innermost tube of the invagination. *e.* Position of the artificial anus.

bottom of which the longitudinal muscular fibres were exposed. There was also some ulceration of the lips of the ileo-cæcal valve.

The intussuscepted gut was subsequently dissected, when a large quantity of soft recent lymph and some blood were found filling the whole of the space between the two serous coats, causing a tolerably firm adhesion between them.

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Laying open the innermost tube (the entering portion) it was found to be contracted and completely filled by blood clot, except for its upper 3 inches, where the canal was dilated around a curious polypoid mass which projected into it. The mass was firm in consistency, and fleshy-looking, but covered by the villous mucous membrane of the bowel. It measured $2\frac{3}{4}$ inches in length, and had a rounded club-shaped free extremity below; whilst above it was firmly attached to the bowel by a short peduncle of the size of the little finger, which completely occluded the gut at this its most constricted part. The circumference of the mass at its thickest part was 3 inches. The mucous membrane covering it, like that of the bowel which enwrapped it, was coated by a thin layer of blood. It was evidently this body which gave the firm, solid character to the large part of the intussuscepted mass lodged in the caput coli; and probably it was this portion of the intussusception that was felt during life.

The colon was almost empty. It contained only a little grumous matter in its upper part. The small bowel contained a slight amount of fluid yellow fæcal matter. The remaining viscera were natural, with the exception that the bronchial tubes contained an excess of secretion.

Remarks.—If it be asked why operative interference was not earlier resorted to, it might be replied that it was not until the third day after her admission that the presumption of intussusception was strong enough to justify it. Of course, reading the case now by the light of the post-mortem examination, it may indeed be matter for surprise that the diagnosis of intussusception was not held from the first. But with the facts before us, the abdominal pain and bilious vomiting, the swelling and dulness in the right iliac region, the small amount of actual tenderness, and the evident exaggeration of the pain by the hysterical condition of the girl, there seemed as much evidence in favour of fæcal accumulation and typhlitis as there was of intussusception, the possible occurrence of which was present to the mind from the first. Nor when the history of the case was learnt could any facts be adduced to support the former view, except this, that she was not habitually constipated, and that during the preceding week her bowels had even been relaxed. But then on two previous occasions, the last only a week before, she had experienced similar attacks, and recovered from them. With this diagnosis the case was treated by opiates; and it not being deemed prudent to give purgatives, enemata were adminis-

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tered with no result. As the case progressed, however, with no material change in the symptoms—the persistence of the tumour, the continued constipation, the vomiting (never, it is true, of a 'fæcal' character), and finally the supervention of the general distension of the belly—doubts began to arise as to the simple nature of the case, and the idea of intussusception was once more taken up. This view was materially strengthened by the fact that a large injection was returned discoloured, as if by altered blood, and having an extremely fœtid odour. The patient was now in a very exhausted condition, so that it was felt that if operative measures were resorted to they should be taken forthwith; but, at the same time, little hope was entertained of a successful issue if the bowel were, as was feared, already gangrenous.

The immediate effect of relieving the obstruction by the artificial anus was striking and full of encouragement. For twenty-four hours she was free from pain and vomiting, and was cheerful. But (as was seen at the operation) peritonitis was already present; and the rapidity with which she sank after the temporary rally was due, doubtless, in great measure to this, added to the extremely exhausted state to which she had been previously reduced.

Intussusception of the ileum *through* the ileo-cæcal valve is of comparatively rare occurrence, and one of the extent here met with is extremely uncommon. Possibly we have here an explanation of the absence of any discharge of blood *per anum*, from the strangulation of the intussuscepted part being complete from the first, preventing any continued outpouring of a quantity of blood. Still, a considerable amount of clot was found in the included gut. The extent to which inflammatory changes had been set up, and to which ulceration had taken place at the seat of constriction, can hardly be explained except on this view of complete strangulation at the date of onset of the symptoms, only six days before death.

The co-existence of the polypoid growth in the ileum with the intussusception is an interesting fact; for from its situation, viz., in that portion of bowel that was the very last to become invaginated, it is plain that it could not have directly determined the intussusception in the ordinary way, viz., by mechanical traction on the bowel. But its very presence was the probable cause of the previous abdominal attacks, and the indirect cause of the intussusception, by exciting undue peristalsis. It is almost surprising that it should

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have been forced (or, more strictly speaking, dragged) through the ileo-cæcal valve, where its presence must have added to the completeness of the strangulation of the bowel, whilst at the same time the vessels in the tumour itself must have become extremely engorged. This would have rendered all attempts at reduction futile, however early they might have been made. It may be added that the tumour was composed largely of adipose tissue; it was invested by mucous membrane containing crypts of Lieberkühn, and a greatly thickened submucous layer of lymphoid tissue, whilst several bundles of plain muscular tissue traversed it in various directions. The blood-vessels within it were full of blood. The growth may thus be called a *lipoma*,* arising probably in the submucous tissue.

LI.—*On the Simulation of Ascites in Cases of Intestinal Obstruction.* By E. Markham Skerritt, M.D. *Read May* 23, 1879.

ONE of the commonest and most reliable signs of ascites is dulness in the dependent parts of the abdomen, changing its site with alterations in the position of the patient. In the two following cases of intestinal obstruction this sign was present, but there was no ascites. As I have been unable to find any reference to similar instances, or any caution against this source of fallacy in the diagnosis of ascites, I venture to think that the observations made on this subject may be of some interest.

The first case is one that I brought before this Society on February 14—that of a patient who came under my care at the Bristol General Hospital, with intestinal obstruction from fibrinous exudation; and I will, therefore, refer only to the special condition which is the subject of my paper. During life, when the patient lay on his back, some dulness on percussion existed in each flank, as high as the anterior superior iliac spine; when he turned on his side, the flank that was uppermost became more resonant. During the progress of the case this sign became somewhat more marked. Post-mortem, the small intestine was found to be greatly distended with liquid fæces and gas, *and there was no fluid in the peritoneal cavity.*

* It is hardly necessary to state that lipomata in the intestine, although rare, are not unknown. Virchow figures one arising in the jejunum, which bears a striking resemblance to the polypus in our case. (See Virchow, *Die Krankhaften Geschwülste*, fig. 74.)

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The second case was that of a boy, aged 16, admitted into the Bristol General Hospital on March 3. Five days before severe pain in the abdomen came on, and continued up to admission. On the fourth day vomiting set in, and recurred at frequent intervals. The bowels acted on the first and the third days, and very slightly on the fifth; flatus was passed occasionally up to the fifth day.

On admission, the patient's expression indicated some suffering; the face was pinched and pale, the eyes were sunken, the skin dry, the pulse 88, weak, small, regular; the tongue dry and thinly furred. The abdomen was swollen and somewhat tense; there was no pain, except on movement. Slight tenderness existed in the right iliac region, rather more marked about the umbilicus, and in the left loin. On percussion, resonance was diminished over the pubes and in both flanks; in the latter the dulness extended as far for wards as the anterior superior iliac spines; and when the patient turned on either side the opposite flank became more resonant. There was occasional vomiting of greenish sour-smelling fluid. An enema of three pints was given easily, but without effect. Ordered morphia internally, and hot fomentations to the abdomen.

Next day there was no special change, except that flatus had been passed twice.

On the following day, March 5, wind was again passed twice, but the vomit now had a somewhat stercoraceous character. As my surgical colleagues did not advise operative interference, owing to the low state of the patient and the obscurity of the condition existing, I determined to try Dr. Kerr's treatment by large doses of belladonna, and accordingly ordered 40 minims of the tincture every hour—the effect to be closely watched. Altogether, fifteen doses (equal to 10 drachms of the tincture of belladonna) were given in as many hours; and at the end of this time the patient lay quietly in bed, apparently unconscious, but moved the head and arms when spoken loudly to. The conjunctiva was sensitive; the pupils were about half-dilated, regular, and insensible to light. The mouth was open, the tongue was somewhat swollen, and, together with the soft palate, uvula, and pharynx, was red and glazed. There was a bright-red blush over the backs of the hands and wrists. The pulse was 124, soft, somewhat larger and stronger than before. The abdomen was decidedly less distended, and manipulation caused no sign of pain. The patient was lying on the right

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side, and the left flank was resonant, while there was dulness in the right flank as high as 1 inch in front of the anterior superior iliac spine. There was no supra-pubic dulness.

During this day, three doses of 30 minims each of the tincture of belladonna were given, and towards evening the patient began to be delirious and to talk constantly.

Next day, March 7, the delirium still continued, and was evidently of a pleasing character. The patient answered questions cheerfully, and said he felt better. The abdomen was certainly more flaccid. Tenderness just above the umbilicus was complained of.

The patient on this day was lying on the *left* side, and dulness was distinctly marked as far forwards as 2 inches in front of the left anterior superior iliac spine, while the *right* flank was resonant.

At midday the patient was almost pulseless at the wrist, but was still able to move about in bed with apparent ease. The pleasing delirium continued. Soon after, death took place very quietly.

Post-mortem.—A knuckle of small intestine, about 5 feet distant from the stomach, was adherent to the left side of the brim of the pelvis, and here a coil about 6 inches long was doubled back upon itself so that the two ends of this portion were applied to each other and closely adherent; between the extremities the included gut was puckered up, and the whole was bound together by adhesions evidently of no very recent formation, as they were organised into toughish fibrous tissue, which gave way only to considerable force. There was no sharp line of strangulation, but the whole of this portion of the gut was much congested, of a dark claret colour; it measured about an inch in diameter. Below this point, the intestine was extremely contracted; and above, the gut was greatly distended with liquid fæces and gas, so that the coils measured from 3 to 3½ inches in diameter. *There was no fluid in the peritoneal cavity.*

Remarks.—Before passing to the special subject of this paper, two points in this case call for brief comment:—

1st. The effects of the belladonna. The more severe toxic effects of belladonna are generally developed in this order:—Delirium of pleasing character, convulsions, coma, and death. In this case the dose was so large and frequent that the patient apparently passed at once into the stage of insensibility, and, when the effect of the drug was somewhat going off, seemed to return to the earlier stage of pleasing

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delirium. Although the dose was somewhat heroic, yet it was less than that given by Dr. Kerr in his cases of intestinal obstruction successfully treated with belladonna. The drug seemed to have, on the whole, a somewhat beneficial effect, as the pulse slightly improved and the abdomen became less tense.

2nd. The cause of the obstruction. This appeared to be the binding down of a considerable tract of intestine by adhesions, and consequent interference with the normal action of the gut and the passage of fæces; for there was no sharp constriction, and the gut was but little contracted. The loop of intestine affected looked as if it might previously have been down in the sac of a hernia; but there was no definite history of hernia, and there was no other post-mortem evidence of its former existence.

In both these cases of intestinal obstruction, the common sign of ascites was present—dulness in the dependent parts of the abdomen, changing with the patient's position—and in neither was there any fluid in the peritoneal cavity.

We have, therefore, to inquire what physical conditions were present that could give rise to this anomaly; and it seems to me that there is only one explanation applicable. Great distension of the intestine was present in each case; the gut contained a large proportion of liquid fæces, and also some gas; and I believe that the peculiarity noted was due to the fact that the gas and the fluid in each coil of intestine necessarily obeyed the same physical laws as do the gas-containing intestines and the free fluid in ordinary ascites—that is, that in each coil of intestine the gas would rise to the top in whatever position the patient lay, and the fæces would sink to the bottom; and that this was appreciable to percussion, not only on account of the great distension of the individual coils, but also because of the relatively large amount of fluid fæces contained in them. According to this theory, when the patient lay on his back the dulness in each flank was the sum of the dulnesses due to the liquid fæces in the individual coils; when he lay on either side, the resonance in the uppermost flank was the sum of the resonances produced by the gas in the same individual coils.

So far as I have been able to discover, the existence of this physical sign in the absence of ascites and of such a condition as a large cyst containing fluid and gas, has not

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before been described; and it appears to me of some practical importance, because in an obscure case it may step in and turn the doubtfully-balanced scale of our opinion in the wrong direction. The dulness in these cases was not very marked nor very extensive, and fluctuation could not be obtained across the abdomen; in fact, the signs were just those commonly met with when there is a small quantity of fluid in the peritoneal cavity. According to the explanation above given, we shall meet with this difficulty in diagnosis only in cases where there is great distension of the intestine from cessation of the onward flow of the fæces—that is, when there is either some mechanical obstruction, or when the obstacle is cessation of peristaltic action owing to enteritis or to peritonitis simply. If in such a case there is some evidence in favour of a mechanical obstruction, some in favour of a simple inflammation, then the presence of this sign—usually regarded as indicating a small quantity of free fluid in the abdominal cavity—would naturally be looked upon as strong evidence in favour of the existence of peritonitis with effusion. In the first of the cases I have brought forward, I was confirmed, by this physical sign, in the belief that there was no condition to be relieved by operation, and that enteritis and peritonitis alone existed; the diagnosis was correct, but an important factor in it proved to be fallacious. In the second case my previous mistake prevented me from falling into the same error, and in noting the condition existing I pointed out that it was *by no means* conclusive evidence of the presence of peritoneal effusion.

To the conditions which in their physical signs may simulate ascites, there must, therefore, be added the following:—Great distension of the intestines with liquid fæces and gas, as met with in intestinal obstruction.

LII.—*Cases illustrating the Communicability of, and some other Points connected with, Molluscum Contagiosum.* By Stephen Mackenzie, M.D. *Read May* 23, 1879.

WHILST the specific quality by which this disease is designated in this country is still called in question by some eminent dermatologists, I have thought it desirable

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to bring under the notice of the Society some cases which have fallen under my personal observation, and which illustrate the communicability of molluscum contagiosum.

It is not my intention to trespass upon the time of the Society by entering into the literature of the subject, or by discussing the histological nature of the molluscum tubercles. I wish merely to add to the valuable series of cases brought before this Society by Dr. Dyce Duckworth, and cases recorded elsewhere by Mr. Jonathan Hutchinson, Dr. Paterson, Dr. Liveing, Dr. Fancourt Barnes, Mr. Balmanno Squire, and others.

I have arranged the cases into three series, in which I have personally seen all the cases. To these I have added two cases where the patients presented themselves with the statement that some one with whom they had come into contact was similarly affected, and a case in which a family predisposition appeared to exist. I have supplemented these by an account of some unsuccessful attempts I have made to inoculate the disease.

First series.—Six members of one family affected with molluscum contagiosum, and two re-infected:—

Eliza G., the fourth child, was brought to the Skin Department, London Hospital, on May 30, 1871. She had several characteristic mollusca on her face. They were thought to be warts, and had been noticed about three or four months. The little tumours were snipped and squeezed. The child's health was quite good. The mother stated that her baby at home had a similar place in its head, and she was asked to bring it, which she did the following week.

Infant, æt. 4½ months. It had a single molluscum tubercle on the scalp, which had been noticed 1½ months. The child was at its mother's breast. The mollusc was extirpated.

Nothing was seen of the patients until July 31, 1878, when the mother, Eliza G., came about herself. When examined, she was found to have numerous mollusca on her breasts. She stated that about April 1878 she noticed a single warty tumour just under the nipple of the right breast; it remained in the same condition about two months. She had been nursing her baby all this while, but noticing a wart on the baby's neck she feared the infant was catching the disease from her, and therefore weaned it. Just previously to doing so, she observed that, whereas up to this

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time she had had only one wart, 'quite suddenly' a number came out around the nipple. Fresh ones continued to make their appearance on the right breast, thorax, and shoulder, and about a month later exactly similar places came on the left breast. When she came under observation she had as many as thirty or forty mollusca on her breasts, chest, and neck. They were most numerous on the right breast, where many were clustered around the nipple.

Her baby accompanied her. It had mollusca on the left upper eyelid, neck, chest, and left shoulder. The mother stated that, when weaned, it had a place only on the chest, and that the others came out shortly afterwards. On September 18 the baby's tubercles were cut and expressed, when it was noticed that he had extremely minute ones on the thumb and forefinger of one hand.

Ada G., the sixth child, æt. 4, was the next to be affected. She had a warty place on the right temple, which got very large and 'bursted.' The mother was sure it was of the same character as the others, 'because it had a little hole in the middle.'

Eliza (the first affected) had a recurrence of the eruption. On August 14 she had one tubercle on the lower lip. It had been noticed about three or four months, during the time that the baby was affected. She had been quite free from the disease for more than a year. The tubercle was snipped across and squeezed out.

Ellen G., the fifth child, æt. 6, called her mother's attention to a place on her leg in September 1878. She told her mother she had 'one of them little places like Liza's.' Her mother said it had a little hole in it like the others. She was brought to me on October 9. The mollusc was quite characteristic, and I snipped and squeezed it.

The mother has fair hair and light eyes, as have all her children, with the exception of Ada, whose hair and eyes are darker. The father and one son have remained unaffected.

Rebecca C. (a married sister of Mrs. G., living exactly opposite in the same street) came to the Skin Department on January 15, 1879, with two mollusca on her face, which she had noticed about three months.

They were snipped and squeezed. Seen on March 29. No recurrence.

Second series.—Infant at breast, and mother affected.

Lucy E., æt. 18 months, was brought to the Skin Department, March 19, 1879. Several well-marked molluscs on

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left side of chin, and on left eyelids. They had been noticed to be coming for about three months. The mother could not account for their coming. The child is nursed by neighbours' children, but none of them are known to be affected.

Caroline E., æt. 26, mother of above, when asked, denied having any places on breasts, but, on an examination being made, she was found to have two characteristic tubercles of molluscum contagiosum on the areola of the right breast. Suckles her baby at both breasts. Her husband and two other children constitute the family, and are unaffected.

Third series.—Two children living next door affected.

Lucy S., æt. 15 months, brought to Skin Department, March 12, 1879. It had about ten or twelve well-marked tubercles of molluscum contagiosum on the chin, running upwards and backwards behind left ear to the edge of hairy scalp. They had been noticed about seven months. The child had been weaned a week when it came under observation. The mother's breasts were examined and found free from eruption. There are four other children in the family, none of whom are affected. On inquiring of the mother if she knew of any other persons being similarly affected, she stated that her next-door neighbour's daughter had similar spots. She was asked to bring the child the following week, which she did.

Harriet P., æt. 5. She had characteristic molluscum tubercles, about fifteen in number, scattered over face: one situated at commencement of auditory canal, one on right upper eyelid at free border, one on the outer canthus of left eye. No other part affected. The places had been noticed on face about twelve months. There are four other children in the family, who play together and with other children. Has never been to school. None of the other members of family affected. Parents have no idea how she caught the disease. She often nurses and kisses Lucy S., her next-door neighbour.

Two cases where the patients were said to have come into contact with others similarly affected:—

Solomon C., æt. 6½, came to the Skin Department, May 9, 1877, with several mollusca on the face. None others of his family were affected, but his mother stated that a little boy in the same street had similar warts. Was seen March 22, 1879, and had had no recurrence of the disease since the mollusca were extirpated at his first visit.

Louisa W., æt. 24, came to Skin Department, August 21,

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1878, for some warts on her thigh. She was found to have four on the inner side of her right thigh. She had noticed them about five months, and attributed them to sleeping with a young woman, who had similar warts, during the pea-picking season. She wore the same chemise as the other woman, and it was blood-stained when she put it on. She was a married woman; neither her husband nor children were affected, she asserted.

A case in which a family predisposition to the disease appeared to exist:—

Samuel C., æt. 3, admitted to Skin Department, July 5, 1876. He had several mollusca on the face, which were snipped and squeezed. Was seen March 22, 1879, and had had no recurrence of the disease. His mother states that four out of her six children have had similar warts when between two and three years of age. No two of the children have been affected at the same time.

Inoculation Experiments.—I have tried many times to inoculate the disease, but so far without success. Several medical practitioners and students have lent themselves for the purpose. I have tried the expressed sebum and the broken-up gland structure as inoculating material. These have been rubbed into the skin, and introduced into the skin by scarifying the surface. The forearms and chest have been the parts especially selected for the experiments. The part has in some instances been covered by plaister for several days to prevent the possibility of removal of the inoculated matter, and in all cases special injunctions have been given not to wash or disturb the part.

To test whether the want of success which has attended the efforts of all experimenters, except Dr. Paterson, was due to non-susceptibility to the disease of the person operated on, I have made several attempts to inoculate the disease in persons suffering from it at the time. These efforts, however, have not been attended with better success:—

Eliza G., having numerous mollusca on her breasts, was inoculated with the expressed sebum from one of her own molluse tubercles on her breast on August 21, 1878. She was seen on March 27, 1879, but no development of a molluscum had taken place.

Ellen G. (daughter of above) had one molluse on arm. This was snipped across, and she was inoculated with the expressed sebum from it on the same arm in January 1879. Seen in March. No development of molluscum.

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Rebecca C. (aunt of above). Two mollusca on face. Inoculated with the sebum from her own molluscs on the breast, on January 15, 1879. Seen March 29. No development had taken place.

LIII.—*Two Cases of Paralysis of the Serratus Magnus as a part of Infantile Paralysis.* By D. B. Lees, M.D. *Read May* 23, 1879.

PARALYSIS of the serratus magnus is sufficiently rare to make any well-marked instance of it worthy of notice. The cases hitherto recorded have occurred in adults. I am not aware that attention has been directed to this symptom as an occasional form of infantile paralysis. In the two following cases the serratus is but one of numerous muscles more or less paralysed, but the signs of its affection are well marked.

Case I.

Elizabeth M. was seized, at the age of 9 months, with general paralysis. For at least a week she could not move either head or limbs. Gradually she recovered power in many of the muscles. She was brought to the Hospital for Sick Children, on August 29, 1878. At this time the muscles in worst condition were those of the left shoulder and right leg. Faradic response was completely absent in the left deltoid and triceps, in the flexors and extensors of the foot and the extensor of the toes on the right side. It was also much impaired in the right deltoid and the muscles of the left leg. During the following month it was observed that there was a curious falling in of the left side of the front of the chest during inspiration, instead of the normal expansion. It was also noticed that the position of the scapula was altered on the left side; it was drawn up to a higher level than the right scapula; the upper angle was drawn nearer to the spinal column, and the lower angle had left the chest wall, and projected backwards, in marked contrast to the scapula on the other side.

These symptoms seemed to justify a diagnosis of paralysis of the serratus magnus. It was then found that if one pole of a galvanic battery were placed in the supraclavicular region or in the upper axilla, and the other on the thoracic

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wall in front of the scapula, a forwards movement of the scapula responded to a current of 17 Leclanché cells on the right side, but no movement could be obtained by the use of a much higher number of cells on the left.

It is doubtful whether the paralysis of the serratus will sufficiently account for the sinking in of the chest wall during inspiration; possibly the intercostals may be affected also. Certainly the rhomboidei are paralysed; there is no muscular resistance when the scapula is pulled forward.

The child's general condition has improved under treatment, and the sinking in of the chest in respiration has somewhat diminished; but the position of the scapula is unaltered, and the electrical reactions remain the same.

Case II.

Herbert P., aged 12 months, was found completely paralysed one morning early in December 1878. He was brought to the Hospital for Sick Children on December 20. In him also, as in the previous case, the parts most deeply affected were the left shoulder and back of arm and the right leg, but the right deltoid was also decidedly paralysed. It was observed that the angle of the left scapula projected from the chest wall. On turning the child on his back the left scapula fell away from the ribs. It was doubtful whether a minor degree of a similar condition was not present on the right side also. Respiration was entirely diaphragmatic, and there was no movement of either scapula on the thorax. There was no unilateral depression during inspiration.

No electric reaction could be obtained in either serratus by the method above described.

This child has considerably improved under electrical and manipulative treatment. The right scapula seems now in normal position, and the left nearly so, and both deltoids have regained much power. He can now raise the hand above the level of the shoulder on the right side, but is still unable to do so on the left. Some response to Faradism has reappeared in both serrati, and these muscles seem fully recovering.

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LIV.—*Gas in the Peritoneal Cavity in Typhoid Fever—Relieved by Puncture.* By GEORGE BROWN. *Read May* 23, 1879.

THE case which I wish to bring before the notice of the Society this evening is one which I venture to hope will possess considerable interest on account of the new point which it raises in the clinical features of typhoid fever. I refer to the accumulation of gas in the peritoneal cavity—a complication which, as far as I am aware, has never been recognised as a possible one in this disease. The accumulation of gas in the intestines is only a too frequent complication, not only in typhoid but also in other diseases of an inflammatory character, and appropriate measures by puncture and otherwise for its evacuation are recognised; but our text-books are silent as to the possibility of such accumulation being situated in the peritoneal cavity except in case of perforation of the bowel.

In the tenth volume of the Society's 'Transactions,' Mr. R. J. Godlee relates three cases in which the presence of gas in the peritoneal cavity was observed. The first was that of a man who was the subject of phthisis and advanced albuminoid changes with ascites. The distension appears not to have been extreme, and nothing was done for its relief; but that the condition existed was proved at the post-mortem examination. In the other two cases the gas was met with as complicating the operation of colotomy, and the operator, Mr. Heath, found it necessary in one instance to evacuate the gas before he could open the intestine.

In my own case the patient was a young man, aged 21 years, a booking clerk, recently married, and of very delicate appearance, with a history of phthisis on his mother's side. He came to me on October 8 last, in the evening, complaining of cough, expectoration, and debility. The cough had existed for some considerable time, but he had felt ill only about a week. His temperature was 100°, and pulse 108. On examination I found dulness at the right apex and moist râles. I ordered him to keep to his room for a few days, regarding the case as one of phthisis assuming an acute form. Two days after, when I saw him, his temperature had

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risen to 103°, but his pulse was only 104. He was then sitting up about to take his tea. I recommended him to go to bed and to take only liquid nourishment. Next day (11th) I came to the conclusion that the case was typhoid complicated with congestion of the lung and bronchial catarrh. It is unnecessary to go through the daily notes; suffice it to say, that the case presented all the usual features of a severe attack of typhoid. The temperature ranged high, invariably marking over 102° F., both morning and evening, from the 12th to the 21st, when it reached the maximum point touched—105·2°. The moist râles, which commenced at the right apex, spread gradually down the same side until the whole lung became invaded. The same condition developed in the left lung, commencing at the apex. The expectoration was very abundant, frothy, of light colour, without blood. Throughout the case the abdominal symptoms were very marked, there being great tenderness, occasional diarrhœa, and tympanites. At first the tympanitic note was localised to the parts of the abdomen occupied by the intestines, and continued so for a week or more, but on October 23, which, as near as I could judge, was the beginning of the fourth week of the fever, I noticed signs which led me to suspect that gas had escaped into, or was being generated in, the peritoneal cavity. These were a gradual uniform distension of the abdominal wall, more marked tympanitic note on percussion, which now extended over the whole of the abdominal region, entirely masking the hepatic and splenic dulness. Next day (24th) the abdominal distension was much increased, and now gave rise to considerable distress through pressure on the diaphragm, causing dyspnœa and displacement of the heart's apex upwards and outwards. Respirations were 44 per minute, pulse 128, temperature steady all day at 101·6°. Urine passed involuntarily. Bowels relaxed, acting every two or three hours. He was now quite delirious, muttering and talking incessantly.

On the 25th the patient's condition was about the same, except that the breathing was gradually becoming more difficult and the distension of the abdomen more extreme, notwithstanding that he passed a considerable quantity of flatus from the bowel. The following notes of his respirations were taken by his father, a very intelligent man, who watched by, and nursed his son almost constantly through his long and ultimately fatal illness.

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October 25,	2.30	A.M.,	36	per minute.
„	5.0	„	40	„
„	11.0	„	46	„
„	7.0	P.M.,	41	„
„	10.0	„	45	„
„	11.0	„	46	„

During one of my visits on this day I suggested to the father that the cause of the distressed condition was the enormous distension of the abdomen, and that if, as I expected, the peritoneal cavity was full of gas, a simple puncture through the abdominal wall would give relief. Shortly after midnight, finding the breathing becoming more and more urgent, and fearing that his son would not live through the night, the father sent for me, and expressed a strong wish that I would perform the operation I had proposed. On my arrival I found the respirations varied from 46 to 50 per minute, and were very shallow, only three or four of the upper ribs taking part in the respiratory movements. The heart was so much displaced that the apex-beat was half an inch outside the nipple, and on a level with it. The tympanitic note could be elicited all over the abdominal cavity, which was uniformly convex, and over the sternum as high as the articulations of the fourth costal cartilages. Feeling confident that a puncture with a fine trocar and canula could do no harm, even if no good resulted, I introduced a small aspirator trocar into the peritoneal cavity, about an inch below the umbilicus, taking care to direct its point upwards immediately the abdominal wall was punctured, so as to avoid wounding the intestines. On withdrawing the trocar, a rush of gas through the canula took place which continued for several seconds. The gas was perfectly odourless. When the gas ceased to escape I withdrew the canula and applied a piece of adhesive plaster. I am unable to estimate the quantity of gas which escaped, but it was sufficient to cause the disappearance of the tense condition of the abdominal wall, and to permit the heart to regain its normal situation. The urgent dyspnœa was also relieved immediately, the respirations falling in a few minutes from 50 to 36 per minute. I was now able to discover a fact which had escaped my observation previously, viz., that the bladder was greatly distended. I had previously percussed more than once over the situation of the bladder to discover whether it was distended or not, but was unable to obtain dulness in consequence of the presence of

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gas between the viscus and the abdominal wall. On passing a catheter I drew off nearly two pints of urine. Shortly after he fell asleep, and slept at intervals during the remainder of the night. During the day his respirations continued much less frequent than before the operation, generally ranging between 36 and 40 per minute. His temperature, which was 103° on the evening of the 25th, fell to 100·2° by 11 next morning, and the pulse fell from 124 to 112. There was, however, no improvement in the condition of the lungs, the cough was almost incessant, and the expectoration of frothy mucus very copious. He continued to be delirious until the morning of the 27th, when his father reported that, after sleeping at intervals during the greater portion of the night, he awoke perfectly sane and collected, and, after taking some iced milk and a little beef tea, which he enjoyed very much, he entered into conversation with his wife and friends on the chief events of his illness, asked to inspect his temperature chart, which was handed to him, and he expressed surprise at his temperature registering over 105°. His respirations were then 34, and his pulse (his father's notes state) was 'quick, but strong and regular.' An hour or two afterwards he said he should feel much more comfortable if he were washed and his linen changed, and this was being done when I paid him my morning visit about 11 o'clock. In order to get at his back, to dust with powder the buttocks, &c., for bedsores were by this time beginning to form, he was turned over on to his left side, being too weak to sit up, and was in that position when I entered the room. I had not been able to examine the back of the chest for several days, so I seized the opportunity to percuss and auscultate this region very rapidly, certainly not occupying more than two minutes in these procedures. On turning him back to the recumbent position we were alarmed to observe that his face and lips were livid, his wrists were pulseless, and feet and hands cold, and he was quite unconscious. Cardiac syncope had taken place through turning him over on his left side, and in another minute he would have been dead. We at once poured a little brandy and water down his throat, employed friction over the arms and legs, applied hot water to his feet, &c., by which means we succeeded in re-establishing the circulation temporarily, but he never regained consciousness, and sank in less than two hours. This was an unhappy termination to the case; but even had death not

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have taken place in this manner he must have died very shortly after from the lung complications. The physical signs pointed to tubercle in the right apex, and both bases were engorged, so that dulness was absolute on either side to above the angle of the scapula. Unfortunately I was unable to obtain a post-mortem examination.

Remarks.—The points of interest in this case are numerous, and afford ample scope for debate.

First, as to the diagnosis. Was the case one of typhoid, or was it acute phthisis? I confess to considerable doubt on this point at first, nor could I feel sure until the appearance of typhoid maculæ over the abdomen after he had been nearly a week under my observation. The temperature chart is, I think I may say, almost typical of a case of typhoid, although I would not attach much importance to temperature observations alone unless supported by other clinical phenomena. My diagnosis was confirmed by Dr. Sansom, who saw the case in consultation with me on (as I calculated) the 21st day of the fever. After hearing the history of the case, and before seeing the patient, he strongly inclined to the opinion that it was acute phthisis, but after seeing him, and examining closely the eruption, he came to the conclusion that the case was undoubtedly typhoid.

Next, as to the source of the gas. The usual cause of gas in the peritoneal cavity in typhoid fever is, as is well known, perforation of the intestine; but I think it is sufficiently clear that this could not have been the case in this instance, on the following grounds:—(1st) The gradual development of the gas in the peritoneal cavity. (2nd) Absence of symptoms of collapse as might have been expected had perforation taken place. (3rd) The fact that the tympanitic condition of the colon and small intestines was unrelieved by the operation. Had perforation existed, gas would undoubtedly have continued to escape into the peritoneal cavity after the operation, but there was not the slightest evidence that this did take place, although the patient lived thirty-six hours after the peritoneal cavity was emptied. Lastly, and on this point I would lay the greatest stress, the gas which escaped was entirely free of fæcal odour.

How, then, if there was no perforation, are we to account for the presence of the gas? Two sources only strike me as being probable—(1st) The gas may have passed by diffusion

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through the intestinal wall; or (2ndly) The gas may have been derived direct from the blood, by exosmosis, through the delicate walls of the peritoneal capillaries. As to the first-named probable origin. Practical physiologists now recognise that the interposition of animal membrane offers no impediment whatever to the diffusion of gases (*vide* Professor McKendrick's 'Outlines of Physiology,' p. 195). Knowing that Dr. Richardson had experimented largely as to the diffusion of gases, I wrote to him for his opinion as to the source of the gas, and the following is his reply:—'I can quite believe that the gas was present in the peritoneal cavity, but regarding its development I am in doubt. I should assume it was formed in the alimentary canal, and diffused into the peritoneum. To that diffusion there would be no impediment of moment, the diffusion of gases through membranes being very easy, but I do not see the source of it in the peritoneum originally. It is not necessary to have perforation for the gas to escape, and if it came off from the upper portion of the intestine it might be comparatively odourless, but I think it must have been derived from the intestine.'

For several days before the accumulation of gas took place, the blood had been highly charged with carbonic acid gas (as indicated by a general purple hue of the skin); and as the condition of the lungs prevented perfect aëration, it seems to me not unreasonable to believe that the gas would escape by exosmosis through the extremely delicate walls of the capillaries of the peritoneum.

I cannot, however, decide this point. I prefer to leave the case on record in the hope that other observers may be able to throw additional light on the subject, should they meet with similar cases in their practice.

LV.—*A Case of Imperforate Rectum, for which Amussat's Operation was performed.* By W. Morrant Baker. *Read May* 23, 1879.

A FEMALE infant, 19 days old, was sent to me at St. Bartholomew's Hospital, July 3, 1876, on account of imperforate rectum, for the relief of which the surgeon in attendance had on two occasions endeavoured by operation to find the lower end of the bowel, but without success.

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The abdomen was enormously distended, the vomiting was frequent, and the child was much exhausted.

Chloroform having been administered, I made an attempt to find the bowel through the short cul-de-sac which represented the anus and the site of the two previous operations. My search, however, was in vain. Notwithstanding a very free incision, and in spite of the great distension of the abdomen, no bowel could be found; nor could any bulging of the parts, even during the action of the abdominal muscles, be detected. It was deemed best, therefore, after consultation with my colleagues, Mr. Willett and Mr. Marsh, who were present, and who kindly examined the patient with me, to desist from further operative procedures in the neighbourhood of the anus; and it was decided to open the colon in the left loin.

The operation in the loin, which was performed in the usual manner, was attended by no difficulty, and the peritoneum was not wounded. Meconium freely escaped, and within a few hours the infant was greatly relieved.

Regarding the after-treatment there is little or nothing worthy of remark, unless it be the fact that an elastic tracheotomy tube having been inserted into the bowel through the wound in the loin, has been worn continuously ever since, with the exception of the few minutes occasionally occupied in removing and cleansing it, or in replacing one tube by another. In this way all troubles which might have arisen from constriction on the one hand, or prolapse of the bowel on the other, have been avoided; the former being that which I am inclined to think would have been the more likely to happen in the present instance.

November 16, 1876.—It is noted that the child is well. The elastic tube is constantly worn, but fæces pass only once or twice a week. The abdomen is not distended.

In May 1877 it is noted that the child is well. The tube is still worn, and only removed for a few minutes at intervals of several days, or even, the mother says, sometimes two or three weeks.

Fæces do not readily pass unless the bowel is well syringed with warm water through the tube.

The note for June 1878 is identical with the above; and the same may be said at the present time (May 1879).

Remarks.—Instances of recovery after the performance of an operation for artificial anus on account of imperforate rectum are curiously rare. This patient now shown to the

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Society is probably the only one now living in this country.

Mr. Curling* refers to only one case, as seen by himself—that of a boy who was operated on in 1852 in South America, and was brought to England when 8 years old for a consultation as to the propriety of making an attempt to establish an anus at the natural site.

Mr. Holmes remarks†: 'I have only been able to find a single successful case recorded since the publication of M. Rochard's paper (in 1859), although the publication of that paper must have given rise to the performance of many similar operations.' In that case, which occurred under the care of Dr. Pooley, in the State of New York, the child was in perfect health six months after the operation.

Amussat had only two successful cases of lumbar colotomy in infants.‡ The first died at the age of 7; the other was alive at the age of 8, and in good health.

The question as to what kind of operation should be performed in cases of imperforate rectum when the bowel cannot be found at the outlet of the pelvis has been a good deal discussed; but I do not propose to occupy the time of the Society by a recital of what has been so well treated, and can be so easily found, in Mr. Curling's work on 'Diseases of the Rectum,' Mr. Holmes's 'Surgical Diseases of Children,' or in any of the larger text-books of surgery.

I would merely refer to the sum of the matter in dispute, viz., that, in such cases as those referred to, the choice of the surgeon lies between opening the descending colon or sigmoid flexure through a wound in the groin (Littré's operation), and operating on the descending colon in the left loin by Amussat's method. In the former case the peritoneum must necessarily be wounded, and the artificial anus is made in an inconvenient situation. In the latter there is a chance of being able to reach the bowel without wounding the peritoneum at all; the chance being less, however, than in adults on account of the frequent existence of a long mesocolon. There is the risk, however, it is said, of not being able to find the large intestine at all, when the length of its mesentery is excessive.

Taking into consideration the fact that cases in which the colon could not be found at all in the left loin must be

* 'Diseases of the Rectum,' 3rd edit., p. 226.
† 'System of Surgery,' 2nd edit., 1871, Vol. V., p. 817.
‡ Curling, *loc. cit.*, p. 229.

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excessively rare, and that, excluding these, Amussat's operation gives the patient a good chance of an unwounded peritoneum, I am disposed to believe that it is the best to be performed in cases of imperforate rectum, where it has been impossible to reach the lower end of the bowel. I am aware that the majority of those who have written on the subject of late years seem to think Littré's the better operation, but I think on insufficient grounds.

As Mr. Holmes justly remarks,* however, our experience of either operation is not sufficient at present to serve as a foundation for any very exact comparison.

It is with the object of increasing the number of facts which will enable us ultimately to come to a decision, and not because it is assumed that one successful case can do very much by itself towards establishing a rule in surgery, that I have ventured to bring this case before the Clinical Society.

* 'System of Surgery,' 2nd edit., Vol. V., p. 816.

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